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FINAL ENVIRONMENTAL IMPACT STATEMENT.

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PERMIT APPLICATION BY UNITED STATES STEEL CORP. PROPOSED LAKE FRONT STEEL MILL, CONNEAUT, OHIO.

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CHAPTER FIVE: ANY PROBABLE ENVIRONMENT EFFECTS WHICH CANNOT BE AVOIDED

Introduction

5.1
Implementation of a project on the scale of the proposed Lakefront Steelmaking Facility will result in unavoidable environmental, social, and/or economic consequences that might be considered undesirable. The evaluation of undesirable or adverse effects, particularly in the social environment, depends on each individuals' perceptions and values: an undesirable effect to one group may be desirable to others. No significant unavoidable adverse impacts are expected in the areas of Government structure, employment, fire protection, sanitary wastewater, solid waste and energy. The following paragraphs discuss possible undesirable consequences of the construction and operation of the proposed facility in the areas of population, housing, and quality of life consisting of cost of living, income distribution, community character and cohesion, and local government.

Population

5.2
The applicant feels that the addition of 15,000 new residents would have no adverse impact upon the Regional Study Area. Other projections predict increases of 11,000 to 58,000 new residents (refer to Chapter Four). Distributed over time, the first increases would occur during construction (1979 to 1982) but the greatest permanent increase would come with plant operation in 1982. Distributed in space, the greatest increases are expected to occur principally in the Local Study Area, particularly in the urban area of Conneaut City, and along the major roads to the Lakefront Plant. Based upon the occurrences at other large facility developments (defense, energy, and reservoirs) much of the population influx may be "guided" by local governments through zoning and placement of housing developments.

Housing

5.3
Reflecting the population scenario presented above, the impact of increased housing demand would be greatest in the Local Study Area and less in the Regional and Principal Study Area. During plant construction, there would be an increased demand for rental units to house some of the construction work force, while during plant operation single family residences would be required. If the building industry cannot keep up with demand, the use of trailers would multiply in the area. Springfield is the only community which appears to pose limitations to proposed development due to lack of municipal sewer and water service.

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5.4 Quality of Life

A major impact of the facility on the area's social environment would be a change in the Quality of Life for the present residents. Such changes could originate from the relatively rapid population influx due to increased economic opportunities and the resultant effect on several key factors of Quality of Life.

(a) Cost of Living

Increases in the cost-of-living caused by the development of the Lakefront Plant are expected to occur principally in the Local Study Area with the largest relative gains expected in the cost of housing (rental and purchase), the average cost of goods, and the costs of selected services (medical and personal services). These increases would adversely affect residents on fixed incomes (elderly, disabled) who rent, and newly marrieds and low-income families wishing to purchase homes. The impact magnitude would be greatest during construction and early plant operations. when demand for housing and other goods and services would exceed supply. Since the study area lies within the heavily populated eastern corridor the price rises will not attain a magnitude or length common to remote area boom towns.

(b) Income Distribution

The influx of new workers and high salaries into the well-established area would affect the income structure of that area. Due to a rise in the cost-of-living and the new, higher incomes, present residents would find that their relative position in their community's income structure had declined. This effect would be greatest on already poor, and others on fixed incomes or in jobs whose wages could not rise at a commensurate rate (public workers, teachers) would regress on the income ladder.

(c) Community Character and Cohesion

Beginning with plant construction, the character of the communities, particularly those in the Local Study Area, would be affected by the influx of newcomers. Increased population would increase the physical size of communities, decrease interior accessibility, and with the influx of "new ways" the communities would become more metropolitan, through an increased divergence of backgrounds. Some residents will leave because of their desire for a simpler way of life which growth would have marred. The public places for the social gathering of friends, e.g., taverns, parks, and the general store, would be frequented by newcomers and some of the intimacy lost. Interests and factions, stemming from different backgrounds, and goals, could introduce "new" versus "old" conflicts in politics, customs, and everyday social interaction. Finally, social problems would increase, but with no guarantee that the communities would have the technology to cope with them. On the whole, the smaller communities close to the proposed plant would lose intimacy and cohesion.

(d) Local Government

The local governments would be compelled to be more active and to anticipate, plan for, and try to control the numerous social changes. These processes generally create greater centralization of the community government. The political system changes in other ways: citizen participation increases as issues are contested; feelings of political efficiency decline; new interest groups vie for political power; new leaders and plurality of power emerge due to greater economic diversity; and the community becomes less politically autonomous if it requires state and national funds to ameliorate social problems.

Educational Services

5.5
Adverse educational services impacts occurring in the Regional Study Area would result from increased operating expenditures which, in certain years, imply property tax rate increases over baseline rates. Although operating expenditures are estimated to increase in both the Conneaut Area City and Northwestern School Districts, there would be no adverse financial impacts because sufficient tax revenues would be available from plant-related development to meet the expenditure requirements.

5.6
The physical capacity of facilities to handle the project-related pupils is sufficient in the Regional Study Area although during a few years the Girard District elementary school and the Buckeye District elementary and senior high schools may experience enrollments which will slightly exceed capacity. New students could have an adverse impact on the Ashtabula County Joint Vocational School (ACJVS) which cannot enroll any more students due to its limited capacity. Access to other forms of vocational education opportunities could be provided for those vocational education pupils who cannot be accommodated full-time at ACJVS (i.e., ACJVS could offer split sessions; increase satellite programs in certain skill areas in the regular high schools; and increase its present 4-6 p.m. program.) Erie County Technical School, since it is expanding in 1981 to meet baseline projections, can handle the project-related increases.

5.7
In the Local Study Area, the additional need of facilities will likely occur in the Conneaut Area City School District as follows:

Senior High School Addition in 1981

5.8
Construction costs of a 200-pupil addition to the senior high school in 1981 could result in a property tax rate increase during that year.

Additionally, the likelihood of voter approval in 1981 of the necessary $1.5 million bond issue may be diminished because of the potential property tax increase. However, delay of the construction project, in the absence of an approved bond issue or a policy decision to avoid the property tax increase, will cause serious overcrowding at the senior high school in 1982. The present site of the senior high school is small and the recreational area, which is already substandard, would be reduced further by expansion of the school. If sufficient properties cannot be purchased to allow site expansion, acquisition of the required additional land area through eminent domain may be necessary. Displaced residents would have to find suitable housing, and there would be a small reduction in the available housing stock within the city. Although portable classrooms or rental of space could provide interim solutions to an overcrowding problem, they are nonetheless short-term measures which may impair educational quality. During 1981, in the absence of an approved bond or to avoid a property tax increase, these measures may provide the most practical solution.

Junior High School Addition in 1985

5.9
Adding approximately 17,000 square feet to the junior high school could require site expansion in order to ensure that adequate recreational area is provided. The bond issue for constructing the junior high school addition, estimated at approximately $830,000, would require voter approval. If not approved, overcrowding (assuming 100 percent utilization of the facility) by 60 pupils would occur during 1986, by 135 pupils during 1987, by 60 pupils during 1988, and by 40 pupils during 1989 and 1990. Unlike Conneaut Senior High School, the Rowe Junior High School site is located in a more open area and its expansion may not cause displacement of households. If the bond issue for the junior high school were not approved by the voters, portable classrooms and rental of space as well as increasing the number of pupils per classroom could be considered as mitigating measures. The pupil excess would not be substantial, except in 1987, so these short-term measures may prove practical, provided that educational quality is not impaired.

Construction of an Elementary School in 1986

5.10
Voter approval of the elementary school bond issue, estimated at $2.7 million, will be required. In the event the bond issue is defeated, there will likely be serious overcrowding of the existing elementary schools. Since construction of the 500-pupil elementary school would occur only one year following the junior high addition project, a bond issue jointly financing the two projects could be considered.

The Conneaut Area City School District could consider a number of alternative space allocation plans to reduce or eliminate the elementary school construction requirement, or the District could reorganize its entire structure, as suggested below:

- Maintain, rather than phase out, the 200 seats in an older elementary school and attempt to gain voter approval in 1986 for a $1.6 million elementary facility for 300 pupils.

- Maintain, rather than phase out, the 200 seats in an older elementary school, utilize 100 percent of the available costs through extensive busing, and attempt to gain voter approval in 1986 for a 150-pupil addition (at a cost of approximately $800,000) to one of the newer elementary schools. Increasing the number of pupils per classroom from 25 to 27 could eliminate the need for construction.

- Reorganize the entire grade structure of the Conneaut School System, shifting from the current K-6, 7-9, 10-12 structure to K-5, 6-8, 9-12. Such a shift could make nine elementary classrooms available and eliminate the need to construct additional elementary facilities if the older 200-seat elementary school is maintained and 100 percent of the available seats are utilized through extensive busing. As an alternative to extensive busing, the number of pupils per classroom would be increased from 25 to 26 or 27. Under this option, the middle/junior high school requirement would remain about the same, while the senior high school would require additional space for the 350 9th grade pupils (baseline and impact). The senior high school construction program in 1981 could be increased to a 550-pupil addition of 82,500 square feet, costing an estimated $4.2 million.

- The grade restructuring option has an advantage in conforming to the recent national trend toward K-5, 6-8, 9-12. A disadvantage lies in beginning construction in 1981 before revenues from the Lakefront Plant would be received. Also, more households might be displaced.

Health Care

5.11
The change in the health care system due to the proposed facility and related development will primarily affect the two hospitals that are located near the proposed site. Brown Memorial Hospital in Conneaut, with a current capacity of 86 beds, might need to expand to about 105 beds in 1982 and 120 beds by 1987. Ashtabula General Hospital may need to expand from the current 235 beds to 265 beds in 1987. Also, it is anticipated that Brown Memorial and Ashtabula General will require 10 physicians and 12 physicians, respectively by 1990. Five more physicians would be needed in Erie County, especially if new residents locate in rural areas. The insignificant number of incoming people who are over 65 years of age suggests that nursing homes will not be adversely affected.

Law Enforcement

5.12
It is possible that increased traffic, particularly in the Local Study Area, could generate significant additional law enforcement requirements. This would create adverse impacts in terms of substantially higher local Government costs and diverting fully trained police officers from their primary responsibility. Mitigative measures for traffic-related adverse impacts on law enforcement services would be the creation of temporary or part-time positions and the establishment of reserve police forces to handle traffic control. Temporary or part-time police personnel could be hired to provide services during peak traffic years or during the morning and evening rush hours. Reserve officers without full police powers could also be used to provide traffic control services on local streets. These actions would lower traffic-related law enforcement costs and allow fully trained officers to handle other police responsibilities.

Recreation

a. Primary Impacts

5.13
Primary impacts on recreation will occur during both the construction and operation phase of the proposed action. Construction activities which will have the most significant impact include: Installation of a culvert in Turkey Creek, construction in beach areas east and west of the mouth of Turkey Creek and dredging in Lake Erie. Replacement of 7,500 feet of Turkey Creek streambed with 5,600 feet of culvert will result in the permanent loss of this reach of stream as habitat for game fish. However, in contrast to the applicant's original plan to divert the creek into Conneaut Creek via channeling, the current

plan specifies that the lower 1,500 feet of creek and areas upstream from the site of the proposed culvert remain intact. The culvert would be designed with baffles and resting pools and a skylight system to facilitate upstream migration of salmonids. Additionally, the applicant intends to augment the flow of the creek during peak migration periods by diverting some plant intake water into the upstream end of the culvert in order to eliminate low flows which present a formidable barrier to salmonid migration. The downstream end of Turkey Creek will be subject to habitat improvements under the direction of the Ohio Department of Natural Resources to increase the potential for successful spawning by rainbow trout while the sections of creek upstream of the culvert will be available to the Pennsylvania Fish Commission for management. In conjunction with these programs the applicant has also agreed to allow fisherman access by boat to the mouth of Turkey Creek and the adjoining beach. This will provide some recreational fishing opportunities. However, access to fenced areas of the creek will not be permitted and this area will be lost to the public. The applicant also proposes to offer a 94-acre tract as an addition to Raccoon Creek County Park or as a new Pennsylvania Game Land Unit to enhance hunting, fishing, and nonconsumptive outdoor recreational opportunities. Although access to the East Breakwater by land will be eliminated by plant construction, the applicant will allow access by boat.

Construction of the proposed plant will also entail the permanent removal of riparian wildlife habitat. The elimination of this habitat will result in the direct mortality of wildlife and the emigration of the remaining individuals. Adjacent habitats are probably at or close to carrying capacity. Increased population caused by the emigration will cause starvation and disease to occur on the Lakefront Plant wildlife and the resident population of the unaffected areas. As previously mentioned in 4.183 the "primary impact area" will be fenced in and in addition public access will be denied to the remainder of the site.

The Pennsylvania Game Commission estimates that the area designated for construction provided a minimum of 818 man-days of public hunting for major game species. This figure does not include minor game species and predators and trapping for furbearers. The loss of this recreational resource is significant. Lake construction, including blasting and dredging, may cause Lake Erie fish species to avoid the area as long as the activities continue. This in addition to construction equipment hindering small craft navigation will restrict fishing opportunities during the construction phase. Available mitigative measures include the prevention of the loss of fishing areas, the establishment of new fishing and hunting areas, and the alleviation of hazards to small boats. Mitigative measures for Turkey Creek are discussed in the sections of this chapter entitled Aquatic Biota and Terrestrial Biotic Environment.

Increased Activities in Conneaut Harbor

5.14
The expected increase in the harbor traffic due to the presence of construction and maintenance dredging equipment and the increased number of ships and barges may interfere with movement of recreational small craft. This problem may be mitigated by the use of additional navigational aides. Such systems are established in other port areas around the country and could be maintained by either the Conneaut Port Authority or the U. S. Coast Guard. A separate traffic system could also be maintained for deep-draft vessel traffic. Increased deep-draft vessel traffic may require a review of port capacity that could result in improvements to navigation features.

b. Secondary Impacts

5.15
Potential unavoidable adverse impacts on recreation due to the presence of new plant-related population include increased use of certain facilities in short supply (e.g. beach areas, boat launching ramps, and moorings, and fishing areas along the lake and in Conneaut Creek; and increased use of park facilities such as ball fields and picnic and camping sites). These impacts would be expected in varying degrees throughout the coastal communities. Mitigative measures to lessen the effect of these demands would most likely concentrate on expansion of present park facilities, establishment of new park areas, and development of more areas for lake activities (e.g. beaches and boat launching and mooring areas). To be effective, improvement of existing facilities and the addition of facilities should begin during or before Step 1 of the Lakefront Plant construction period to serve both the construction and operations-related populations.

Ohio Local Study Area

5.16
Possible mitigative measures include:

- Renovate Camp Peet.
- Promote and Improve Facilities at Farnham Park.
- Implement the Conneaut Port Authority plans for a public mooring area and marina with launching ramps at Lakeview Park.
- Construct the planned 33-acre park west of Parrish Road

Other Ashtabula County Coastal Communities

Kingsville

5.17
Possible mitigative measures include: Construction of launching ramps and expansion of mooring facilities at Village Green Park, construction of camping area at Buck Lake to relieve demand on Village Green Park camping facilities, and construction of a park area along Conneaut Creek to increase fishing opportunities. Road access could be via Creek Road or South Ridge Road.

Ashtabula

5.18
Possible mitigative measures include:

- Expansion of facilities at Walnut Beach Park in Ashtabula City per present plans with funding by the Federal Land Conservation Act.

- Construction of a boat mooring facility at Lake Shore Park in Ashtabula City.

- The watershed area along a in the northeast corner of Ashtabula Township . the Kingsville Township border could be a suitable site for a park. This area could provide more hiking and camping space, and fishing opportunities. Access to this area would be provided by La Bounty Road.

- Establishment of a park along the Ashtabula River in the southeastern corner of the Township with access via South Ridge Road.

Saybrook

5.19
In Saybrook, recreational mitigation could be achieved through the improvement of lake access facilities for boating. At present there are no public boat launching or mooring sites, and the only private area (Redbrook Boat Club) provides two launching ramps and 50 moorings for members only.

The Rest of the Ohio Regional Study Area

5.20
The applicant expects that the facilities in the remainder of the Ohio Regional Study Area would be adequate to meet the needs of

plant-related users. Mitigative measures to expand or improve facilities to accommodate these users are not considered necessary.

Pennsylvania Local Study Area

5.21
Suggested mitigative measures specified to the Springfield area include:

- Expand existing facilities at Raccoon Creek Park.
- Improve and increase swimming areas.
- Provide improved access to Crooked Creek.

Other Erie County Coastal Communities

Girard Area

5.22
Possible mitigative measures include:

- Develop Elk Creek boating facilities
- Improve Lake Erie Campgrounds.

Fairview Area

5.23
Possible mitigative measures include:

- Develop small streams as fishing or management areas.
- Develop Walnut Creek with additional boat ramps, docking space, etc.

Millcreek Township

5.24
Mitigative measures may include:

- Develop Walnut Creek through selective fisheries management.

The Rest of the Pennsylvania Regional Study Area

5.25
It is expected that recreational facilities in the remainder of the area would be adequate to meet the needs of plant-related users, therefore, no mitigative measures are likely to be required.

Taxes

Conneaut Area City School District

5.26
In 1981, the Conneaut Area City School District might have to increase its tax rate from a baseline rate of $28.30 to $31.80, a 12 percent increase. The tax increase results because the District would incur substantial impact-related expenditure requirements in 1981, but would not receive substantial revenues from an expanded tax base until 1982. The adverse tax rate impact for 1981 could be mitigated by delaying for one year the construction of the senior high school addition. In that case, the District could postpone issuing bonds for one year and thereby avoid $143,000 in debt service costs in 1981. Alternatively, the District could build the school in 1981, but borrow short-term funds in anticipation of tax revenues to meet the 1981 debt service costs. With no additional debt service costs in 1981, the tax rate increase would be about $1.80, a six percent increase. The increase could be reduced still further by temporarily reducing operating expenditures below the amounts estimated herein. Reducing expenditures might adversely affect educational quality, but only for one year.

Buckeye Local School District

Increased Property Tax Rates

5.27
To finance the estimated increased operating expenditure, the property tax rate in the Buckeye Local School District would increase by $1.90 in 1981 (eight percent over baseline expenditures) by $2.10 in 1986 (10 percent over baseline expenditures), and by $2.40 in 1990 (12 percent over baseline expenditures). Reducing this level of impact would necessitate cutbacks in operating or capital expenditures. A reduction in the number of teachers and, consequently, salary costs would increase class size, and may adversely affect educational quality. Cutbacks in permanent improvement allocations from the estimated $100,000 annual expenditure may be more practical. Although the Buckeye Local School District is currently spending substantial amounts for permanent improvements to facilities, this may be only a short-term program. Cutbacks in permanent improvement funds would reduce but not eliminate the need for property tax increases. To avoid the property tax rate increase, expenditures in

several budget categories would be reduced, with potentially adverse effects on educational quality.

Ashtabula Area City School District

Increased Property Tax Rates

5.28
To cover the estimated additional operating expenditures, property tax rates in the Ashtabula Area City School District would increase $.80 to $.90 (four percent) over baseline rates. The $.80 to $.90 increment over baseline property tax rates could be circumvented by increasing class sizes or reducing capital programs for facility improvements. Considering the aged condition of Ashtabula schools, cutbacks in permanent improvements may also be undesirable.

Girard School District

Increased Property Tax Rates

5.29
To meet the estimated increased operating expenditure requirements, the property tax rate in the Girard School District would likely rise by $1.80 over baseline property tax rates in 1981. After 1981, the rate increase declines to $.90. The 1981 increment accounting for about $40,000 in additional revenue required, could be eliminated by budget reductions in areas where educational quality would be least impaired. Since the adverse effect decreases to $.80 after 1981, short-term cuts to avoid property tax increases may be feasible.

Fairview School District

Increased Property Tax Rates

5.30
Increased operating expenditures are estimated to result in a $1.90, or four percent increase over baseline property tax rates in 1981, decreasing in succeeding years to a two percent increment. This adverse effect could be reduced or eliminated by cutbacks amounting to a maximum of $64,100 in operating expenditures. Fairview per-pupil expenditures are the highest among the school districts in the Regional Study Area. According to the educational standards employed in this analysis, these expenditures reflect the emphasis by Fairview District on maintaining levels of educational services that are well above standard. The likelihood of cutbacks in Fairview would depend on the extent to which its desired level of educational quality would be affected by reducing expenditures in certain areas.

5.31
A means of mitigating adverse tax rate effects in the Regional Study Area would be to institute a program of local tax revenue sharing. Under such a program, the school districts or municipalities in which Lakefront facility property is located would "share" part of their revenues with the jurisdictions that would have to raise their property tax rates to meet the impact-related expenditure requirements. The disparity of "fiscal mismatch" between those jurisdictions that would receive the tax benefits of the facility and those that would incur the costs of plant-related development, but receive no benefits, would thereby be eliminated. The Minnesota "fiscal disparities" law might be a suitable model for a local revenue sharing program. Under this law, enacted in 1971, taxing jurisdictions within the seven-county Minneapolis-St. Paul metropolitan area share in the growth of the area tax base. Each year 40 percent of the net growth in the commercial and industrial valuations for all taxing jurisdictions in the area is aggregated to comprise an areawide tax base which is then redistributed to the taxing units using a population-based distribution formula. The amount returned to each taxing unit depends on its market value of taxable property per capita as compared to the market value per capita for the entire metropolitan area. The portion of the areawide valuation distributed to each taxing unit is taxed by that unit at a rate equal to the weighted average tax rates of all taxing units in the metropolitan area.

INFRASTRUCTURE

Water Supply

5.32
The increased population and commercial/industrial activity induced by the proposed steel plant site is expected to require a significant increase in the amount of water that must be supplied by central water supply systems in the principal study area. Since the proposed facility will have its own water supply system, there should be no direct primary impacts on the area water supply systems. The additional land requirements needed by communities for central water supply system expansion are relatively minor.

5.33
In the Ohio Local Study area the maximum impact occurs in 1987-1990 where the projected increase in water requirements over baseline use is about 20 percent. This will require that some towns expand their water supply systems sooner than they had planned. The major impact of expansion is financial. Expansion of the systems and/or construction of new systems will result in increased capital investment,

increased operating and maintenance costs, and an increase in baseline water rates. By 1987 the Ohio local area would have to expand to total capacity of about 3.7 MGD. The estimated cost for construction including additional water mains is $817,000. By 1990 operating costs could reach an additional $33,000 per year. Expansion induced by the proposed action may not increase baseline water rates for the city of Conneaut.

5.34
The potential impacts of the proposed action will be greatest for the Pennsylvania Local Study Area, specifically the Springfield area. East Springfield and Springfield Township presently have no central water supply systems. The increase in average water use over baseline is expected to reach 46 percent by 1990. A central water system with a 1990 capacity of 1.0 MGD may be required. A 1.0 MGD groundwater system would cost about $490,000 in 1975 dollars and about $490,000 would be needed for water distribution lines. Also required is about 5.0 miles of pipeline along existing streets at an estimated cost of $490,000. Should a system utilizing Lake Erie water be constructed, the system exclusive of distribution lines would be about $927,000 (in 1975 dollars). Water rates that would be charged to domestic users in Springfield would probably be significantly higher than the rates charged in surrounding communities.

5.35
In addition to Conneaut City and Springfield/East Springfield Borough, the coastal communities along Lake Erie will be impacted but to a lesser degree. Induced annual average water requirements as a percentage of baseline annual average requirements are expected to peak at 25 percent for Fairview Township during the year 1981. The impact is predicted to be 24 percent in Kingsville (1986). The impact relative to baseline water use ranges from less than one percent to 25 percent for Fairview.

5.36
Since the financial burden is the most significant impact, funding of new systems is an important issue. At the present time there are a number of avenues of funding that could be considered in order to provide Federal support for the costs incurred in water supply system development. Possible sources of funds include the Department of Housing and Urban Development (HUD); Department of Commerce, Economic Development Administration (EDA); Department of Agriculture, Farmers Home Administration (FHA), and the Environmental Protection Agency (EPA). In the case of the EPA, the only funding possibility would be that available under the Safe Drinking Water Act of 1974, P.L. 93-523. However, there appears to be little possibility that EPA will fund a grant program under this act.

5.37
Two more likely funding candidates include HUD and FHA. Under the Community Block Grant Program with HUD there is a program of discretionary grants specifically designated for communities of less than 50,000 in population. The amount of funding is limited and competition is high. The application is made through HUD Area Offices (Philadelphia for the Pennsylvania communities and Columbus for the Ohio communities). There are no limitations on the nature of the funding (percent level etc.) but the grants are determined on the basis of priority and need. The HUD agency also maintains an entitlements program for cities with a population greater than 50,000.

In the case of the FHS, grants are limited to communities with populations of 10,000 or less. Grants for water supply development (and sewer system development) are determined by need, and the requirements are relatively stringent. Two criteria for selection are typically used. First, a "one percent" rule is applied, that is, whether or not the costs of water supply and/or sewerage amount to one percent of average household income. On the basis of the projected water rates in Springfield Township there is a definite possibility of the "one percent rule" being in effect. Second, the ability of the community to obtain funding from commercial banking establishments at a reasonable incurred development cost. The Federal assistance programs are options which are available to mitigate the adverse financial effects of water supply system development on local governments. Funding from the EDA has a different orientation than that supplied by FHA and HUD. The purpose of EDA grants for water supply development is to encourage the growth of industry and thus increase employment opportunities. Since some of the water supply need is the result of commercial/industrial secondary development, there is the opportunity for using the EDA funding sources. Cost-sharing ratios with EDA range from 50 to 80 percent. Communities must apply for all the Federal funding sources mentioned above.

5.38
Since the setting of workers in various communities is based on projection and a proposed plant, funding agencies may not be willing to provide monies until such time as more definitive population trends occur. The possibility therefore exists that funds would be advanced only after the need has already become critical.

Sanitary Wastewater Collection and Treatment

5.39
Development induced by the proposed plant is projected to cause some additional sewage facility needs. The impact on the provision of sewage services includes increases in the population requiring

sewage, higher sewage flows, increased construction costs and labor required for new facilities, and operating costs and labor for new facilities. New facilities will result in the commitment of additional land for treatment plants and sewage lines. Increased sewage flows may affect aquatic ecosystems and water quality. The actual adverse impacts due to the proposed plant would be small since even under baseline conditions expansion is required. Actual interceptor costs due to the level of predicted development induced by the proposed plant would be low. The cost of sewer construction in new developments will probably be borne by developers and passed on to home purchasers.

5.40
In the Ohio Local Study Area (Conneaut), the induced population is predicted to be 4,750 persons by 1990. This would require a 0.7 MGD expansion at an estimated cost of $1.1 million (in 1975 dollars). Construction of laterals and extensions of some interceptors is projected at $600,000. Annual operating costs would increase by $90,000 per year.

5.41
The Pennsylvania Local Study Area (Springfield Township and East Springfield Borough) expects no sewage service under baseline conditions. Induced development would increase the population by 2,800 persons (1990) probably requiring centralized sewage treatment. It is possible that the local study area may tie into the proposed Northwest Erie County Sewer Authority to meet the induced service demand. This sewer authority will also serve an additional induced population of 1960 within the service area for a total serviced population of 4,760. The additional population would generate incremental sewage flows of 0.8 MGD. The cost of plant expansion is estimated at $2.35 million and the anticipated cost of additional interceptors is about $4.75 million.

5.42
In the Ashtabula City service area the induced population of 3,900 persons will create only minor additions to existing and planned interceptors. New treatment facilities will not be required as a result of the induced population. Operation costs may increase by $100,000 per year. Erie City service area is projected to have an additional 1,000 persons because of the proposed steel plant. Small expansions of the planned interceptor network and treatment plant are projected to cost $350,000. Annual operating costs may increase by $20,000. The proposed steel plant should not create a need for additional sewage facilities in the remainder of the Regional Study Area. The plant induced development is projected to increase BOD and phosphorus loadings from the four treatment plants mentioned above by 2.1 percent and 3.7 percent, respectively. To mitigate the need for

expanded sewer service, facilities in the planning stages must be constructed at an earlier date than would be required under baseline conditions. Small increases in interceptor and sewage treatment plant capacity are also needed.

5.43
Sewer needs would be most critical in Springfield Township and East Springfield Borough as early as 1982 when relatively large numbers of Lakefront Plant-induced population are projected to move into the Springfield area. To a lesser extent, Conneaut City and North Kingsville Village may require intensive construction of interceptors in 1980 or 1981 to meet the population needs.

Conneaut City has begun work on its facility plant and could receive funding and begin construction before 1980 if approvals are obtained expeditiously. Springfield Township and East Springfield Borough currently have no plans to sewer. If sewers are to be available when needed in 1982, work should begin on a facility plan in 1978. Springfield and East Springfield could join other communities in the Northwest Erie County Sewer Authority. A detailed engineering study of projected sewer needs in Springfield is necessary to determine the most feasible solution to the problem. The Northwest Erie County Sewer Authority is currently awaiting funding of a facility plan by the EPA. If the Sewer Authority is to be able to meet projected sewer service needs, especially if Springfield and East Springfield join the authority, the facility plan should be developed as soon as possible. Ashtabula City expects to begin construction of extensions of interceptors outside city limits by 1980. Currently, North Kingsville Village is not included in the study area of the facility plan. North Kingsville could have a need for sewer service in 1980 or 1981. If North Kingsville Village is added to the study area and an interceptor can be constructed by 1981, the potential problem could be solved. If sewer service is unavailable in a given area, it is likely that developers will build septic tanks for individual homes where soil conditions would allow for packaged treatment plants for subdivisions where on-lot disposal is impractical. Some homeowners may pay the costs associated with tank or packaged treatment plant for a few years before sewer service is installed. One alternative that has been mentioned by Local Study Area residents is for Springfield and East Springfield to discharge sewage via the Lakefront Plant wastewater treatment outfall. The Lakefront Plant diffuser configuration will likely be some 5,000 feet offshore. This measure would have questionable impacts from a water quality/biological standpoint.

5.44
Federal or State funding for sewage treatment to meet plant-induced population increases may not be available until the actual need

occurs. As mentioned in the water supply action, funding agencies may not be willing to provide monies based on projected population increases for a project.

Stormwater Drainage

5.45
As a result of plant induced growth, it is expected that some communities would reach the point where municipally-installed storm sewers would be desirable, both to avoid possible drainage problems and to plan economically for future growth. Due to the high costs and minimal outside funding of storm sewer projects, it is expected that some municipalities would not construct the necessary facilities (e.g., North Lake City Borough, and with less likelihood, Girard Township, Platea Borough, and Girard Borough).

5.46
The applicant expects that the major impacts would be limited primarily to the principal study area. Within these communities where extensive development is expected, costly improvements of existing storm water systems may be required. Total replacement of existing networks is not anticipated with the possible exception of certain areas in Conneaut. Estimated improvement costs are $75,000 for Fairview, $200,000 for Conneaut and $110,000 for Springfield area.

5.47
The following mitigative measures with respect to storm drainage and storm drainage planning in the Principal Study Area have been identified by the applicant:

- System Mapping/Master Drainage Plans - Communities currently without drainage plans and anticipating high growth could prepare maps of the natural and artificial drainage in the community and develop long-range drainage plans. Communities where the measure would be most applicable include Conneaut City, Saybrook Township, Fairview Township, the Springfield Area, and possibly Kingsville Township Even under baseline conditions, this measure would be applicable to all the above-mentioned areas with the exception of the Springfield Area and Kingsville Township. Plans and maps would be most useful if completed prior to the time of maximum expected development.
- Timely Installations of Drainage Facilities - Costs to communities for storm drainage improvements can be kept to a minimum if the required systems are installed as soon as possible, prior to

further development. This measure is especially applicable to Conneaut City where the current drainage system is not adequate in some areas.

- Dual Purpose Ground Breaking - Communities with plans to install sanitary sewers or to improve local roads could consider installing storm sewers at the same time. Minimizing ground breaking and excavation requirements in this way could significantly decrease the cost of storm sewer installations.
- Placing Cost Burden on Developer - Local or county regulations can place the burden of storm drainage installations on developers. Developers can be required to install storm sewers in new subdivisions, provide proper outfalls, tie into existing drainage systems and finance any expansion of downstream facilities that might be required as a result of the new development.
- Proper System Upkeep - If storm sewers are financially infeasible for a community, then the proper upkeep of road drains, open ditching and other components of the drainage system can do a great deal to alleviate drainage problems. Proper upkeep consists primarily of regular cleaning and clearing, and when required ditch expansion.

Solid Waste

5.48
No significant unavoidable adverse impacts are expected on collection of solid wastes in the Local Study Area or on disposal of solid wastes in the Regional Study Area due to the proposed project. The small number of additional collection vehicles required to service the population induced by the proposed project should not add significantly to traffic, noise, or exhaust gas emissions in the Coastal communities. Plans are currently in progress to provide additional land-disposal capacity for the regional baseline population. The waste load imposed by the plant-induced population will not significantly shorten the lifetime of either existing permitted landfill sites or the new sites expected to be provided for the baseline population.

Waste expected from secondary growth during plant construction and operation would require an increase of five acres over baseline solid waste disposal area needs.

5.49
The transportation of materials and workers during the construction and operation of the proposed plant, superimposed on the projected baseline traffic, would cause traffic congestion during peak hours at certain major intersections near the site. This congestion would likely occur even with major improvements in the roadway network. There are several standard practice measures which would be incorporated into the final engineering design of the roadway network to improve traffic conditions (e.g., additional travel lanes, special turning lanes, increased lane widths, etc.), but congestion would still occur.

5.50
One potential mitigative measure that might be considered would be to modify roadway network to include both a U. S. Route bypass and a new IR-90 interchage. Although this approach may be within reasonable economic and institutional constraints, it still would not significantly improve the situation. Traffic congestion would still occur with levels of service E and F at the State Line Road entrance to the site and U. S. Route 6N, Pennsylvania State Route 5 and U. S. Route 20 intersections.

5.51
Another type of mitigative measure would be to arrange U. S. Steel shift schedules so that the arrival and departure of construction workers did not occur during the peak traffic in operating workers shift changes. This could significantly improve traffic conditions in 1985 and to a lesser extent in 1981, but would not help in 1990 when no construction workers are present. Additional improvement in 1981 traffic conditions could be anticipated if the first contingent of permanent employees were planned to arrive well after the peak was past in Step 1 construction activities. Both of these scheduling actions would be under the control of U. S. Steel. It should be noted, however, that because of the nature of construction, operations and supporting activities, there are practical limitations to shift scheduling; and a two-hour period may represent a limit to the shift spread.

5.52
A mitigative measure similar to the above but more comprehensive in scope would be for U. S. Steel and the other industries and businesses in the area to arrange shift schedules so that the baseline morning and late afternoon peak hours and the U. S. Steel construction workers and operating workers peak traffic did not coincide but were spread out over periods of several hours. This approach could be highly effective in reducing traffic congestion. It would require

the voluntary cooperation and planning help from the State of Ohio and Pennsylvania, and perhaps from the Federal government. Proper planning of this type would most likely require a detailed traffic analysis to determine how large an area and which specific companies were involved.

5.53
Mitigative measures could also be achieved by providing public transportation to the proposed site. This would require a detailed analysis of transportation demand patterns to be effective, and might not be economically feasible without subsidy. The amount, method, and sources of subsidy would have to be determined. It would also be difficult to estimate the extent to which such facilities would be used by those workers who represent potential customers. Car pooling, and perhaps the use of vans which can carry nine or ten people, would also be a possibility for reducing traffic.

5.54
Another mitigative measure involves two different approaches to reducing the contribution of truck traffic to congestion. This would include: heavier dependence on rail transport rather than truck transport of materials; and control of truck transport to eliminate most truck traffic during peak hours and redistribute it during other hours of the day. The use of rail transport would depend upon destinations, customers' locations, and the ability of the receiver to unload and handle rail shipments. However, the increase in the total number of trains travelling through such communities as Conneaut could hamper the movement of fire fighting and police emergency vehicles. Those mitigative measures mentioned above which involve scheduling of shifts both within U. S. Steel and including other companies in the area, could be the most effective and least costly approach to reducing or eliminating highway traffic congestion.

5.55
Step 2 plant operations will represent about 25 percent of the tonnage and 20 percent of the ships handled by the Port of Conneaut in 1990. With the planned expansion of the pier and the addition of material-handling systems to handle the increased traffic in ore and pellets, the addition of plant shipping traffic to the baseline shipping in 1990 would not represent a significant adverse impact. However, the increasing number of vessels entering and leaving Conneaut Harbor may interfere with small craft movement within the harbor.

Energy Supply

5.56
There are expected to be no significant unavoidable adverse impacts resulting from energy consumption due to U. S. Steel construction and operation-related secondary activity.

Land Use

5.57
Essentially land use impacts fall into the following categories: the preemption of existing land uses within the proposed 2,760-acre site and the secondary development of land in the Regional Study Area.

Primary Impacts

5.58
Construction of the proposed facility would include the clearing of some 1,766 acres of presently vegetated land, representing an unavoidable loss of this property for uses such as wildlife habitat, recreation or summer cottages. Although the remaining 7,000 acres will not suffer vegetational losses or be physically altered, it is assumed that all other existing land use activities will be inhibited if not eliminated. Noise and disturbances emanating from the plant site during construction and operation are anticipated to be substantial enough to inhibit the continued utilization of the site as a productive wildlife habitat. The aesthetic losses associated with existing land use are considered unavoidable impacts.

Secondary Impacts

5.59
Secondary impacts due to the proposed facility were derived from projected growth rates in excess of baseline projections. These impacts are expected to be significant in the local study area, and relatively minor on a regional basis. Growth requirements are expected to be greatest for residential and recreational development, while industrial, commercial, institutional, and transportation requirements should be minimal. Residential and recreational requirements will average 61.5 percent and 28.5 percent, respectively of the total land requirements in both Ohio and Pennsylvania. In Ohio 1,265 acres will be required for all land use requirements while Pennsylvania will total 888 acres. This acreage represents an unavoidable loss of existing vacant (open space) and agricultural lands. Open space development could jeopardize environmentally sensitive areas which implies aesthetic losses as well as the loss of wildlife habitat, inherent with natural undisturbed areas. Secondary development could result in increased hazard due to development of marginal areas such as floodplains. Loss of agricultural lands implies a reduction in productivity of existing farm crops. However, since it is impossible to identify precisely where development will occur, it is not possible to quantify related losses with any accuracy. Mitigative measures identified by the applicant's consultant suggest more rigorous application of zoning and land use plan. Areas without

local land use plans or appropriate zoning regulations should initiate studies to prepare for increased growth and development. Zoning ordinances could be used to insure wise land use and limit development in floodplains and other marginal areas. Avoidance of environmentally sensitive areas and resources should be emphasized since historically such measures were not given enough consideration.

INFRASTRUCTURE

5.60
Major environmental effects can be expected where development occurs in presently unsewered areas. Numerous package plant-type treatment facilities along the very small, environmentally sensitive streams in both the Ohio and Pennsylvania Coastal Communities could cumulatively or individually, severely impact these streams. Upgrading of existing sewage treatment plants, construction of new plants and new sewage lines will occupy or disturb additional land throughout the study areas. Further installation of water supply systems and lines, storm sewers, and possibly electric transmission line rights-of-way will also affect land use in areas expected to acquire plant-induced population increases. The amount of land altered by these systems cannot be quantified since future land use policies and controls may be formulated as plant-induced development occurs.

Mitigation of Primary Impacts

5.61
Increases in traffic in the portions of the Local Study Area adjacent to the project site access roads during construction and operations could be mitigated by overpasses over local roads with access on the new roads dedicated for plant-related use. Potential for limitations in use of the suburban and rural residential land south of the site in Ohio and Pennsylvania and recreational land east of the site in Pennsylvania due to the effects of onsite industrial activities could be mitigated somewhat by vegetated buffer zones. Leaving such a zone with its present deciduous cover may attenuate noise and visual impacts on adjacent land. Dedicating a zone for permanent open space would insure the future existence of some protection for adjacent recreational and residential lands. The applicant has indicated that such a greenbelt will exist around the plant, but has not defined the concept in detail, with the exception of the Turkey Creek greenbelt.

Secondary Impact Mitigation

5.62
Concerns have been expressed in the Regional Study Area regarding the preservation of "prime farmland," much of which lies in the coastal plain. A complete zoning program for all uses including protection

for farmland has been suggested. Richmond and Woodcock Townships in Crawford County utilizing prime farmland designations based on soils classification, in conjunction with narrowly defined agricultural zoning, have provided one method for facilitating the achievement of this type of land use objective. (Refer to Chapter Two of this statement.) Preferential tax assessment programs, already in use in both Ohio and Pennsylvania, are an additional means by which such land use can sometimes be encouraged. However, a recent review of this subject in Pennsylvania concluded that preferential tax assessment alone was not enough to prevent land speculation in urbanizing areas, and that land preservation alone was not enough to ensure a healthy agricultural land use base. The study recommended a major State-initiated Agricultural Community Development program, with the following major elements:

- Designation of agricultural zones,
- State purchase of development easements,
- Transfer of development rights program,
- Farm-value tax assessment program,
- Inheritance tax incentive program,
- Impact evaluation of public works programs on agricultural land preservation, and
- supplementary programs (new).

Since the Regional Study Area is an area in which urbanization is occurring under both baseline or plant-related impact conditions, major local, State, and possibly Federal initiatives of the above type may be required to mitigate the overall trend towards decreasing emphasis on agricultural land use.

5.63
Resource inventories can provide information on environmentally sensitive areas in a community. Coastal Zone Management Programs in both Ohio and Pennsylvania represent existing sources of as yet incomplete information on some of these resources in the Coastal communities. Institutional tools, selectively designed to protect such designated environmentally sensitive areas may be utilized to direct development away from them or allow only compatible types of development in them. For example, the Erie Metropolitan Planning Department made the following recommendation in reference to protection of flood plains.

"The flood plains should be included as part of the Official Zoning Map of the municipality and a section of Zoning Ordinance should be devoted to regulating development within these areas. Flood plain zoning accomplishes the following three objectives by (1) controlling the land uses permitted within the flood plain; (2) careful selection of sites for buildings; and (3) by making certain that what is permitted is properly secured."

"Suggested permitted uses in the flood plain controlled through zoning follow: open land uses, such as; agriculture, forestry, parks, playgrounds, landing strips, parking, and some properly controlled mineral excavations. Within the flood plain, but along the fringes such uses as commercial and industrial could be permitted as long as they are built above flood level. In no case, throughout the flood plain, should places of human habitation be permitted. This would include mobile home parks, recreation camps, motels, farmhouses, and other residences.

5.64
Similar provisions could be made for other sensitive areas such as lakeshore bluffs or wetlands. The EMPD also suggested establishment of criteria and provisions of the designation of "Historical Preservation Districts" where this might be deemed appropriate. Similar provisions could also be established for the establishment of dedicated open space in amounts and to the degree deemed appropriate by local citizenry. The keys to successful protection of environmentally sensitive parts of the Regional Study Area are as follows: (1) accurate delineation of the nature and extent of environmentally sensitive areas, and (2) adequate application of land use management tools. The former has yet to be completed in the Regional Study Area, even in the Coastal communities where Federal and State monies are available for this purpose under the Coastal Zone Management Act. Pending completion of such inventory efforts, a temporary alternative is for review and planning agencies to require such information on a case-by-case basis at the expense of the proponents of major development projects, as has been the case for the proposed Lakefront Plant.

5.65
As noted above, the use of environmentally sensitive land use management tools in the Regional Study Area has been irregular in the past. A division of responsibility for the use of these tools has recently been suggested for Pennsylvania, and is reproduced below:

(1) Local action - to continue to make 90 percent of the planning and management decisions concerning development and growth in the Commonwealth.

(2) County action - to prepare basic framework land use plans within which municipalities could prepare more detailed plans, and to enforce State guidelines relating to the timing and siting of large scale development of more than local significance.

(3) State action - to plan and control the timing and location of certain key facilities affecting broad State interests and involving major public investments (5-2)

PHYSICAL ENVIRONMENT

TERRESTRIAL REGIME

5.66
Significant unavoidable erosion impacts would occur during primary and secondary construction activities with the resultant effect that streambank erosion and shoreline erosion is accelerated. The magnitude of impact would depend on the success the erosion control plan for the Lakefront site required by the Pennsylvania Department of Environmental Resources (PA DER). Some of the general practices which could be employed under this plan include: minimizing land grading, using temporary vegetation and/or mulch to protect bare areas, installing drainage structures (diversion, basins, etc.) to control runoff, maintaining drainageways in natural cover where possible, and outletting storm and downspout waters to natural waterways at low velocities or in non-erosive areas.

5.67
An erosion rate of 20 tons per acre per year has been estimated for the Principal Study Area which includes the proposed plant site. Utilizing an erosion control plan such as the one required by the PA DER could reduce the erosion rate to two tons per acre per year during construction. In addition to erosion, soil compaction is expected to occur from the use of heavy equipment during construction. Soil compaction affects transmissibility of water in soils and renders it less suitable for vegetation. Soils will also be affected by the removal of vegetation which will interrupt the nutrient cycle of the soils. Site preparation and grading will slightly alter the topography of the area and surface water drainage patterns.

Adverse Effects from Construction Emissions

5.68
The adverse air quality impacts associated with onsite construction activities is the generation of dust. Several operations, including clearing, filling, grading, and construction of roads, parking areas, and facilities are considered to be the major dust-generating sources. Day-to-day dust emissions would vary greatly, depending on the level of activity, the specific operations, and the prevailing weather, so that average conditions during the course of construction must be taken as representative. The estimate of dust emission during construction without any mitigative measures was calculated to

be about 8,200 lbs. per day from the USEPA "Compilation of Emission Factors" AP-42, Sect. 11.2.4 dated December 1975. To reduce the amount of dust emitted to the atmosphere, wet spraying of problem areas will occur on a regular basis. Under this plan, the anticipated reduction of emission rates will be 50 percent according to USEPA AP-42 with resultant emission rate of 4,100 lbs. per day, 170 lbs. per hour. This emission estimate is based on the construction activity occurring over the entire site area. In practice, the construction will be undertaken on a sequentially phased schedule. Implementation of this plan will result in a reduction of dust emissions which might not otherwise occur if all construction activities proceeded simultaneously. Exhaust emission from construction equipment and emissions from open burning may contribute to local deterioration of air quality during the construction phase.

Adverse Effects of Operation

5.69
Emissions from the proposed Lakefront Plant will cause some deterioration of regional air quality. Major operational impacts on air quality are those associated with increased concentrations of sulfur dioxide (SO_2) nitrogen dioxide (NO_2), hydrocarbons, carbon monoxide, and total suspended particulates. Eleven emission rates are expected to be within allowable Class II non-degradation limits and will occur throughout the projected 30-year life of the facility.

5.70
The synergistic interaction of sulfur dioxide and the oxides of nitrogen with ozone could cause damage to sensitive agricultural crops (i.e. grapes), nursery stock, and native vegetation at lower concentrations than would otherwise occur individually. Available data are not sufficient to predict potential impacts on vegetation resulting from synergisms. Mitigation of adverse impacts associated with ozone damage are presented in the terrestrial biotic environment section of this chapter.

5.71
The formation of sulfates from the sulfur dioxide emitted from the Lakefront Plant, when added to ambient levels, may cause adverse health impacts.

Noise

5.72
Investigations conducted by the applicant indicate that noise levels beyond the site boundary will not be significant during the construction phase. This is primarily due to the distance spreading effects which tend to lower noise levels to near baseline conditions.

Process noise during Step II operations is expected to raise noise levels in Conneaut City by 1dB (LEQ - 24 measure). However, at other locations process noise is lower than baseline levels.

5.73
Establishment of the Interstate 90 direct access link will raise noise levels by a maximum of 3dBa over baseline conditions along existing highways. Noise will be substantially increased over baseline levels (prior to construction) along the uninhabited portions of the access road right-of-way. Mitigation measures which could be applied during the design phase for this highway access route include minimizing road grades and the number of signal lights to decrease vehicle and road noise, establishment of zoning ordinances that would prevent residential development near major access routes, and outright purchase of land adjacent to the right-of-way to preclude undesirable land development.

HYDROLOGIC REGIME

Surface Water Impacts

a. Primary Impacts

Construction-Related

TEMPORARY IMPACTS

5.74
The temporary adverse impacts are essentially related to site runoff and/or instream construction activities. The action and the associated impact receptor(s) are listed below.

Activity	Areas That Could Be Affected
Site preparation and plant construction	Lake Erie, Conneaut Creek, Turkey Creek
Intake/Outfall construction	Lake Erie
Bluff stabilization	Lake Erie
Construction of pier extension and unloading dock and required dredging	Conneaut Harbor, Lake Erie
Installation of Turkey Creek culvert	Turkey Creek, Lake Erie
Construction of Roads and Railroad Spurs	Turkey Creek

Some of these activities will result in the increased addition of sediment and other pollutants via surface water runoff, while the rest will adversely affect water quality through the resuspension of sediment in the water column.

5.75
The addition of these constituents to surface waters via runoff or resuspension could affect water quality by increasing biological oxygen demand (BOD) turbidity and suspended and dissolved solids levels. Subsequent reductions in pH and dissolved oxygen are also possible where mixing is minimal. The combined impact on the surface waters could be significant in the first few years after the proposed project is initiated, although such effects would be fairly localized. The applicant has not developed any specific measures at this time to counteract these adverse impacts. However, a detailed plan to control surface water erosion and stream or lake construction activities will be prepared once detailed engineering for the facility has been accomplished. Some of these impacts can be lessened by using energy-absorbing baffles or dams, sediment basins, mulching or quick reseeding of open areas. Impacts due to in-stream (i.e. underwater) construction activities are more difficult to control. For these activities barrier curtains can be used in calm waters where or when the currents are minimal to prevent the transport of suspended materials. Other actions which can be taken to curtail adverse effects include modification of equipment operations and rescheduling to avoid fish spawning periods, use of in-stream silt catchment basins, working on small sections of stream before proceeding to the next section, minimizing the use of in-stream equipment, and scheduling work during periods when significant portions of the stream are dry.

Permanent Impacts

5.76
The permanent impacts associated with the construction phase include the following:

- Channeling the lower portion of Turkey Creek through a culvert and the subsequent loss of 7,500 feet of natural streambed and habitat.
- The filling of several unnamed intermittent tributaries to Lake Erie and several small ponds, and
- The construction of the pier extension and unloading dock in Conneaut Harbor.

Turkey Creek

5.77
During preparation for installation of the culvert in Turkey Creek, disturbance of the streambank and streambed will lead to increased erosion. When this occurs, sediment laden waters will eventually reach Lake Erie. Increased erosion and sedimentation during the installation will increase the levels of dissolved and suspended solids. The removal of overhanging vegetation could result in higher water temperature and lower levels of dissolved oxygen since the shading effect of trees will have been lost. Certain sections of the newly cut streambed may consist of materials that are in a chemically reduced state and exposure of the material to an oxidizing environment can result in certain chemical reactions. Installation of the culvert itself (i.e. actual culvert placement) should have little effect on water quality. After the culvert is in place and fill has been deposited over it, site construction activities such as clearing, grubbing, etc. will commence. Although a large portion of the creek will be protected from construction runoff by the culvert, some surface water runoff will be able to enter the creek from points above and below the culvert. This surface water runoff from disturbed and undisturbed sections of the proposed Lakefront site could enter the creek causing erosion. The resulting sediment laden waters would eventually reach Lake Erie. Water entering the creek will exhibit high suspended solids concentrations and increased biological oxygen demand. The applicant intends to divert, treat, and discharge the major portion of construction which coincide with low flow conditions in the creek. In the plant operation phase, surface water runoff, subsequent to treatment, would be discharged primarily to Lake Erie. Undeveloped areas of the Turkey Crek drainage will continue to flow undisturbed to the creek. The applicant's original plan to discharge into the diversion channel leading to Conneaut Creek has been abandoned along with the proposed diversion. The currently proposed culvert plan could effect hydraulic perturbations in the watershed leading to some increase in erosion and siltation. This could increase the total solids concentration in Turkey Creek. However, proper design of the culvert and its baffle system should minimize the effects on stream hydrology. The shade provided by the culvert could result in cooler water in the summer and warmer water during the winter. Cooler summer water in addition to any agitation created by baffles could increase the dissolved oxygen content of the lower watershed. The culvert by eliminating 7,500 feet of streambed and preventing materials from entering the creek from above (i.e. leaves, organics, etc.) could reduce the amount of organics in the lower watershed. The current mitigation plan specifies the possible augmentation of Turkey Creek flow with Lake Erie water. Comparison of these two waterbodies relative to chemical and physical water quality parameters indicates that augmentation should

have negligible effects on Turkey Creek. Only levels of total iron, TKN, pH, phenol, and dissolved solids exhibited a constant differential between Lake Erie and Turkey Creek waters during low flow periods being considered for augmentation. The values in Turkey Creek, with the exception of pH, were generally higher than corresponding Lake Erie values. Significant differences in trace elements or heavy metals were not found, with the exception of total iron which was higher in Turkey Creek.

Filling of Other Lake Erie Tributaries and Ponds

5.78
The proposed project will require the filling of several small ponds and a number of intermittent streams which are tributaries to Lake Erie. Only one tributary approximately one kilometer west of Raccoon Creek could be left intact. Due to the limited habitat value of these water resources the applicant has not developed measures which could be used to mitigate environmental impact.

Pier Extension and New Dock Installation

5.79
Construction activities associated with the pier extension and dock installation will involve the resuspension of bottom sediments and the subsequent short-term degradation of water quality. The extended pier and dock (as described in the Draft EIS) would impede water circulation in the nearshore waters of the harbor east of Conneaut Creek. As a result higher water temperatures and depressed dissolved oxygen levels could have occurred during the warmer months of the year. However, the appliant's current "open pier" type proposal will not significantly affect water circulation or water temperature.

Operations-Related

Wastewater Outfall

5.80
Contaminants remaining in the effluent after treatment will be discharged into Lake Erie in quantities higher than normally present in this water body. In addition, the lake waters would be used to disperse and dissipate some of the excess heat generated during plant operations. The use of a submerged multi-port high velocity diffuser ensures rapid dilution of the plant effluent by lake water regardless of ambient current. Under these conditions the most severe water quality impacts can be expected at the actual point of discharge where little mixing has occurred. Contaminants exhibiting high concentrations in the immediate vicinity of the discharge ports or which are considered harmful to aquatic biota include: ammonia, cyanide,

residual chlorine, fluoride, phenolics, total dissolved solids, arsenic, heavy metals, and trace elements. Rapid dilution afforded by the diffuser is effective in reducing the temperature of the effluent and the concentration of those constituents identified above which may adversely affect the aquatic biota.

5.81
Although the location of the diffuser appears to be acceptable in terms of the low order of impact it will have on the aquatic ecosystems certain measures have been considered to determine whether they might further reduce environmental effects. For example the outfall could be moved offshore. However, computer modeling studies predict that the incremental improvement in water quality in the nearshore areas would be small if the outfall were moved offshore. Two problems could occur if the outfall were moved offshore. For example, the further offshore the diffuser is placed the higher the probability that effluents would discharge into the thermocline where they could be retained for long periods. Secondly, selection of a location further offshore increases the chances for discharge of effluents into the hypolimnion. The hypolimnion of the Lake Erie Central Basin experiences dissolved oxygen depletion each summer. However, with the addition of Lakefront plant effluents oxygen depletion may occur sooner causing a general degradation of waters in this layer.

5.82
The outfall structure could be moved further to the east. Such a relocation may occur if field studies continue to demonstrate the existence of a semi-permanent current eddy far to the east of the Conneaut Harbor East Breakwater. The existence of such an eddy could cause discharged materials, specifically suspended solids to accumulate near the harbor breakwater. However, relocated to the east may adversely effect a public beach at the mouth of Raccoon Creek. The applicant has also investigated the possibility of increasing the distance between outlet ports which would improve effluent dilution. However, when effluent temperatures are high relative to the lake temperatures (worst case condition) a change in port distance would not lead to a significant change in predicted dilution.

Plant Runoff

5.83
Runoff from the plant site (excluding roofed areas) and raw material storage piles would be directed to nearby surface waters. In conjunction with the applicant's current plan to install a culvert in Turkey Creek rather than to divert it as originally planned, most of the runoff will be directed to Lake Erie. Essentially all of this runoff would receive some treatment (e.g. impoundment or gravity

settling), treatment of runoff from raw material storage piles would be required. Even after treatment, the various runoff streams could have elevated levels of suspended solids, dissolved solids, oil and grease, iron and other heavy metals, and other chemical species. Under circumstances of light or negligible rain, the runoff flow volumes would be low, and no substantial impacts are expected. A large rainfall, however, may result in initially high concentrations of some parameters being discharged (the "first flush" effect) with noticeable but temporary impacts on water quality resulting in the areas near the discharges. The holding basins, in most cases are designed to hold the volume of water expected after 2.5 inch rainfall over 24 hours (the largest storm expected over a two-year period). Further mitigation would require larger retention ponds and/or chemical and physical treatment of the runoff.

Secondary Impacts

5.84
Unavoidable adverse impacts on Lake Erie resulting from secondary development are expected to arise from the increased volume of effluent from sewage treatment plants discharging into Lake Erie, urbanization of the lake watershed which alters runoff quantity and quality, and the possibility of an increased number of accidents, spills or watershed discharges associated with the proposed rise in lake vessel traffic in Conneaut Harbor.

Inland Waters

5.85
The principal adverse impacts associated with plant induced secondary growth result from increased runoff and a rise in the number of domestic sewage disposal systems. Control in both of these areas can be achieved by local communities through the implementation of zoning restrictions, expansion of sewered areas, construction or improvement of sewage treatment plants, regulation on lot septic systems, relocation of discharge points, and plans to control erosion and storm water runoff.

Groundwater Impacts

5.86
Through enforcement of existing and/or pending regulations governing new solid waste management, dredged material disposal, and septic system construction activities, there are expected to be no significant primary or secondary unavoidable adverse impacts on groundwater quality. The principal measures expected to be used in limiting such impacts would be selection of appropriate site geologic conditions (e.g., sufficient renovative soil between disposal area and the

underlying groundwater) and/or engineering of adequate leachate containment (e.g., placement of impermeable liners and/or leachate collection systems). As an additional insurance against potential groundwater contamination due to land disposal several mitigative measures are possible: Chemical treatment of selected solid wastes (based on leachate potential) to decrease the surface area-to-volume ratio, Continuous reclamation/vegetation of disposal areas to minimize percolation of precipitation through solid wastes or dredged materials, and regular maintenance/pump-out of privately owned septic systems.

5.87
In general, waste management involving land disposal increases the potential for groundwater contamination, but lessens impacts to another media (e.g., air or surface water). Also, energy and economic tradeoffs should be considered. For residuals from the proposed Lakefront Plant which remain after resource recovery. The applicant indicates that there are no alternative solid waste management systems considered viable. However, for municipal (baseline plus secondary growth) solid wastes in the Principal Study Area, a regional resource recovery facility appears to be a viable alternative to land disposal. Also, additional zoning restrictions on on-lot septic systems coupled with expansions of sewered areas would provide alternative management of sewage.

5.88
There are no existing or pending regulations which would limit impacts on groundwater hydrology. Both temporary and permanent adverse unavoidable impacts are expected. In summary, groundwater hydrology would be locally altered in the vicinities of primary and secondary activities of: Construction dewatering, watershed topographic alterations, construction clearing and grubbing, and land use change. The impacts expected would include: Temporarily depressed groundwater table elevations in areas of pumping, stabilized groundwater table elevations in relation to altered surface topography, and altered runoff-to-recharge ratios during temporary clearing and grubbing activities and permanently attributed to paving and vegetation land use changes. To mitigate the most significant of these impacts to groundwater hydrology (attributed to land use changes), the following measures are possible: Identify significant groundwater recharge areas and restrict them from development; minimize impervious paved areas on newly developed industrial, commercial and residential lands; and utilize porous paving in newly developed areas where a hard surface is needed and vegetative cover wherever a hard surface is not needed.

TERRESTRIAL BIOTIC ENVIRONMENT

Primary Plant Construction Impacts

Site Vegetation and Wildlife

5.89
Construction of the proposed plant will require the destruction of approximately 1,766 acres of wildlife habitat. The loss of various floristic communities and the ecotones between them will eliminate habitat for a variety of mammalian and avifaunal species. Tables in the Terrestrial Ecology section of Chapter Four indicate the acreage of various seral ecotypes to be lost. Also, the acreage of wildlife habitat loss for specific species is presented by ecotypes for the Pennsylvania segment of the site on Tables in Chapter Four. Woodcock leaving the site during the construction phase may utilize nearby habitat where the land surface drainage, soil texture, and vegetative cover are suitable. Such areas may be able to accommodate a few birds, but if they are at or near carrying capacity, overcrowding will result. Under these circumstances competition for food and nesting sites will increase. If the total number of birds is great enough stress, starvation and disease could cause the decimation of the Lakefront population as well as the existing bird population prior to their influx. Further, birds already utilizing these areas may be forced into areas of low quality habitat where nesting success may be curtailed by increased predation or human activity.

Other mobile wildlife capable of avoiding construction machinery and other hazards will experience the same impact as woodcock. Habitat which is not at or near carrying capacity will not be available. The ultimate result will be the decimation of that population through stress, starvation and disease.

The total wildlife resource loss is not the number of individuals directly decimated by the habitat loss but the potential productivity of those individuals and offspring if the site was unaltered. Productivity for a five or ten-year period is considerably greater than the standing crop.

5.90
During the fall migration period, woodcock from points further north would not be able to utilize the construction area. The sites specific geographic location along with its favorable habitat make the site of significant importance during this period. Pennsylvania Game Commission estimated the fall population to be 1,200 birds on its segment alone. These birds will have to utilize other habitat in the immediate area. The energy required for the crossing of Lake Erie during the flal migration is considerable. These birds have adapted

to utilize the winds and other factors to reduce the energy required for the crossing. The expenditure of additional energy along with other factors such as crowding and the lack of suitable habitat may cause increased mortality among migrating birds. This would ultimately result in a reduction of woodcock populations in other geographic areas if migrating habitats are limiting.

5.91
Movement of trucks or heavy earth moving equipment will generate dust and noise which will have a direct impact on the terrestrial habitat and the fauna it supports. Noise generated during the construction process could interrupt feeding or breeding patterns of wildlife while particulates in the form of dust could adversely effect the surrounding native vegetation.

5.92
Permanent roads will be constructed. The installation methods and impacts would be the same as for temporary roads except that the road bed will be paved. During periods of heavy rainfall, contaminated surface water runoff from the pavement may degrade the adjacent habitat especially if it contains standing water bodies or wetlands. The establishment of permanent road beds can alter surface drainage patterns. For example, if the road bed impedes surface water drainage terrestrial habitat may undergo conversion to wetland habitat. Conversely the installation of permanent roads with large drainage culverts may cause existing wetlands to be drained. The applicant estimates that approximately 76 acres of the site will be permanently altered as a result of this type of road construction. The potential adverse impacts of access road construction could be lessened by choosing the shortest, most direct routes and leaving buffer zones around sensitive habitat. In planning road locations, areas with unique vegetation types or wildlife communities, such as wetlands and riparian areas, should be avoided. The present alignment of the planned east access road, if relocated slightly further to the west, would avoid intersecting wetland areas. The same impacts are encountered with the establishment of plant railroad spurs. The main plant railroad spur will extend northward from the Bessemer and Lake Erie railroad line paralleling the permanent eastern plant access road. Land clearing along the spur right-of-way north of the B&LE will result in the elimination of a portion of the remnant hemlock-hardwood forest, which is the least common vegetative cover type on the Lakefront site. Approximately 21 acres of land will be permanently committed to the plant railroad spur. Although the flora in this area will be eliminated, an edge effect (ecotone) could develop between the rail spur right of way and the adjoining habitat. Such areas are able to support a diversity of wildlife. However, the noise and activity associated with the movement of railroad cars may deter the usage of the ecotone by wildlife. During construction, the

applicant intends to clear only that amount of land which is needed to establish these transportation corridors. Further, all areas exposed during land clearing operations will be reseeded as soon as possible. In the case of temporary road beds topsoil should be distributed over these areas to insure rapid reinvasion by secondary plant species, however, the applicant has not indicated whether such a procedure will be followed.

5.93
Perched wetlands and tributaries of Turkey Creek which are normally replenished by surface water runoff will lose some of this water input since the applicant will collect, divert, and treat runoff prior to discharge to Lake Erie. Thus, areas lying at elevations below the site will be drier and this will cause changes in floral communities and associated wildlife. Reduction in moisture would tend to accelerate plant succession in the area between the site and Turkey Creek. This change could lower the value of this area to woodcock and other fauna requiring wetter conditions and benefit species requiring drier conditions. Community structure would be altered.

5.94
Increased mortality of migrating birds will be experienced due to tall structures such as exhaust stacks and cooling towers. This loss could be significant during periods of limited visibility due to the significant number of these structures and the sites geographic location. As previously mentioned, migrating birds have established flight lanes passing near or over the site. This is believed to be due to the shorter distance across open water to the Long Point area on the Canadian side of Lake Erie. Possible mitigative measures include the use of strobe lighting to act as a visual repellant.

5.95
Approximately 2,770 acres of the steel plant site will be surrounded by fence. Within this area, approximately 1,000 acres will remain in a natural and/or semi-natural state. This large area is capable of supporting deer. Since public access will not be allowed, hunting or other means to harvest and control this resource will not be provided. Deer have a high biotic potential and under favorable conditions can overpopulate an area in a relatively short period of time (five to ten years). Overbrowsing will damage and reduce the value of the greenbelt areas as buffers. Once the carrying capacity of the area is exceeded, habitat destruction, starvation, and disease will occur.

5.96
Any body of open water can be attractive to migrant waterfowl. Large bodies of standing water are especially valuable during winter periods when ice covers prevail. Ash-settling ponds are examples of

such bodies of water. Particulates and chemicals dissolved in the water are exposed to waterfowl. An additional hazard is present if transmission towers and lines are located close to or cross the ponds (Anderson et al; 1975 Anderson 1976). Slag pits can support lush aquatic vegetation attracting waterfowl. In turn, waterfowl add nitrogen and phosphorus which further promotes aquatic growth. Dabbling ducks and to a lesser degree diving ducks are known to ingest slag in such situations (Anderson et al, 1975). The slag may contain high concentrations of calcium, iron, potassium, lead, chromium and other metals. Toxic metals could have a potentially adverse effect on waterfowl and other organisms in the food chain.

5.97
Some of the chemicals expected in surface runoff from the facility (e.g., heavy metals) could have an effect on plant growth immediately adjacent to developed parts of the plant. The maintenance of road and railroad rights-of-way can impact vegetation, particularly if certain herbicides are sprayed over right-of-way areas. If salt is used on roads in the winter, some roadside vegetation would be expected to be affected by the runoff. High noise levels during operation could disturb wildlife in nearby areas, although the wildlife presently found on the site seems generally acclimated to periodic large increases in noise from passing trains and ongoing construction and operations in raw-materials storage areas.

5.98
Onsite Spill Prevention Plan Requirements are part of the plant design, however, in the event of a leak or spill of chemicals in transit (i.e., offsite) wildlife and/or vegetation could be affected. Spills of coal chemicals, such as light oils, could occur near a waterbody affecting both the aquatic and terrestrial biota. Vegetation would be affected by any major changes in spoil pH as could occur due to spillage of acids of bases. Up to 200 acres of the site may be used for solid waste disposal during the plant's operation. The degree of impact that this use would have on the vegetation and wildlife depends on whether the use is necessary, and where the solid waste disposal would be located. It could have considerable impact on aquatic and terrestrial creek biota since Turkey Creek would be relatively unchanged by other aspects of plant construction and operations (refer to Chapter Six for a discusion of alternatives to the original proposal to divert Turkey Creek).

Site Revegetation

5.99
Some site preparation activities will be controlled by the Commonwealth of Pennsylvania under their erosion control program. Although enforcement of erosion control measures can only occur

within the Pennsylvania portion of the site, the applicant has agreed to extend the plan to cover the entire Lakefront site. Despite these measures erosion can occur if the site is cleared too rapidly and reseeding or protection of the exposed land surface proceeds slowly. Top soil stored on site without any protective covering will be lost during periods of heavy precipitation. Should this continue, sufficient quantities of soil will not be available for site restoration after construction. Movement of trucks and equipment can generate dust and noise which would disrupt wildlife residing in areas adjacent to the construction site. Finally, the land clearing operations may cause the removal of two record-sized red maple trees.

5.100
To offset the potential impacts of land surface erosion cleared areas should be reseeded or replanted as soon as possible. Dry areas could be seeded either with tall fescue or a mixture of tall fescue and other legumes and grasses such as birdsfoot trefoil, crown vetch or red clover mixed with common rye, orchard grass or timothy grass. The annual grass will germinate quickly and provide cover within a week or two, then during the next growth season the perennial legume will predominate. The most successful time for reseeding would be early May or late September, for the summer months can be too dry. Hydroseeding may help in dry areas where much topsoil has been removed. This method provides fertilizer and a sticky substance to help seeds to adhere to the soil surface prior to germination. The reseeding of a moist area would be most successful with "wet grasses" such as wild rye. Commercial seed sources do not exist for a wide variety of forbs and legumes, but immediate reseeding with a simple grass/legume mixture can prevent erosion and allow natural successions to begin. Replanting whole plants would bring about revegetation much more quickly, but would probably be more costly. (5-1) The applicant has indicated that land clearance will occur only where necessary and that such activities will be minimized wherever possible.

5.101
Compensation for the loss of Turkey Creek watershed habitat for terrestrial game may be possible, to some degree, through the purchase or creation of improved offsite habitat for some animals. State officials have suggested that the loss of woodcock habitat in the Turkey Creek watershed area could be compensated for by acquisition of additional lands adjacent to Shenango Flood Storage Area in Ohio, and the Pennsylvania State Gameland Area No. 101 on the Crawford and Erie County border. Such an effort would provide some recreational hunting opportunity in new areas within relatively easy reach of former users of the Lakefront Plant site. This possibility may also exist for lands adjacent to the Grand River Wildlife Management Area in Ohio.

5.102
Another compensatory measure that has been suggested for the loss of the Turkey Creek watershed hunting area is the preservation of the area between the Conrail and the N&W Railroad tracks as a wildlife habitat area in which seasonal public hunting would be allowed. Since the issuance of the Draft EIS, the applicant has agreed to implement this plan but public access will not be allowed. The applicant's proposal is discussed in more detail in the following paragraphs. The suitability of the area as wildlife habitat will depend on the amount of traffic noise from the two rail lines and plant access roads, and the effects of plant-related activities on the continued use of the area by resident and migratory game species. Another measure that had been suggested is the possible preservation and selective management by State agencies of a greenbelt area on the perimeter of the developed portions of the plant site. Again, the viability of this plan was uncertain due to effects related to plant operations. The concept was originally believed to be most viable in combination with a Turkey Creek relocation effort, which could be riparian components to the greenbelt concept which differs slightly from the above plan. The major difference is the elimination of the need to relocate the creek. This is a result of the applicant's intention to abandon the original diversion proposal and instead allow the upper watershed to remain intact and to install a culvert in the lower reach of Turkey Creek. The current plan to culvert the creek will allow a greenbelt in association with riparian habitat. Details of the proposed mitigation plan are presented below.

5.103
In mitigation for the losses in wildlife habitat expected as a result of plant construction and operation on the 715-hectare (1,766-acre) primary impact area, the U.S. Steel Corporation proposes a threefold plan:

This mitigation plan was prepared by Fahringer, McCarty, Grey, Inc.

(1) At least partial replacement of lost habitat for selected target species of wildlife by means of intensive vegetative manipulation on a 456-hectare (1,127-are) tract south of the Conrail tracks. The applicant proposes to replace the loss of 43 hectares (107 acres) of typical woodcock feeding and brooding habitat within the steel plant construction site (see Figure 2-140) with similar habitat to be produced by manipulation on approximately 270 hectares (693 acres) of the mitigation area. More than 90 percent of the acreage to be managed does not now qualify as woodcock feeding and brooding habitat.

(2) Provision of opportunities and resources to conduct wildlife research, with Pennsylvania Game Commission and Ohio Division of Wildlife coordination, on the proposed mitigation area and on the proposed Turkey Creek "greenbelt" zone comprising 205 hectares (507 acres) within the planned fence (see Figure 2-140).

The research strategy in broad terms would include: the monitoring of wildlife populations on experimental management and control areas, the planning and supervision of vegetative manipulations to benefit wildlife, especially woodcock and grouse; and other administrative and supervisory duties related to the prosecution of the research study.

(3) Offering a 38-hectare (94-acre) forested tract east of Elmwood Road and north of the Conrail tracks as an addition to Raccoon Creek County Park or as a new Pennsylvania Game Lands unit.

5.104

Proposal 1: Replacement of Lost Habitat. Of the property U.S. Steel Corporation proposes to make available for wildlife management, approximately 270 hectares (693 acres) is classified as potential woodcock habitat. This includes about 23 hectares (57 acres) of land categorized presently as resident woodcock feeding habitat. The remainder is now in open meadows, cultivated fields, pole-age to maturing aspens, and aged thickets of speckled alder, hawthorns, sweet crab apple, etc.

Assuming conservatively that about one-half of the potential woodcock management area can be maintained in vegetation equal in value as woodcock feeding and brooding habitat to the cover designated on Figure 2-139 as existing habitat, the theoretical spring carrying capacity of the mitigation area would be approximately 347 resident adult birds. This compares favorably with the present estimated spring carrying capacity of the combined proposed construction area and proposed mitigation area of 164 resident adult birds.

Management techniques would include (1) manipulating over mature stands of aspens, alder, sweet crab apple or hawthorns to produce optimum ground cover conditions; (2) planting aspens, alders and gray dogwood on open or invaded meadows and cultivated fields; and (3) removing competing hardwood species on invaded old fields and pastures to favor the preferred overstory species -- aspens, alder, gray dogwood, sweet crab apple, etc.

Selected over-mature or overly dense stands of aspen, alder, crab apple or hawthorn would be returned to a productive condition by selective thinning or by periodic clearcutting in strips or patches.

This work would be done at a season of the year when sprouting would result in a new growth of the same cover type.

Plantings of aspens, alders, and gray dogwood on suitable old fields or invaded meadows can create good habitat in a very few years. Any of these species may be propagated by disking and direct seeding. Alders will succeed best on moist to wet sites. Aspens and gray dogwood will tolerate a wide range of site types.

One possible method of establishing aspens on a site dominated by grasses or other herbaceous plants, or by woody plants of little value to woodcock such as silky dogwood, is to disk selected areas just prior to seed-fall in spring. The airborne seeds of aspens most often are dispersed in mid-April. The time of aspen seed-drop varies from year to year, but can be predicted several days in advance by regular examination of the fruiting heads.

Besides woodcock, other wildlife species are expected to benefit from the habitat management efforts, also. These would include cottontail rabbit, rugged grouse, and many species of songbirds. Certain birds of prey also should be attracted to the expected increased concentrations of small mammals and large flying insects.

To benefit the widest possible range of animal life, it is desirable to retain a good diversity of ecotypes. For this reason, it is suggested that any attempt to replace seral ecotypes, such as the swamp or soft maple, hard maple, northern headwoods and upland oak types with aspen, alder and other primary woodcock habitat ecotypes, would be a mistake. These forest ecotypes can support a variety of wildlife and plantlife which might be rare, unusual or otherwise ecologically significant in the area. In this way, raptors, songbirds, and other nongame wildlfie would not be threatened by the mitigation efforts for woodcock.

Because the swamp and red maple ecotypes are so widespread on the lakefront property, and because they produce so little mast, it might be desirable to manipulate at least a portion of these ecotypes in an effort to create a greater diversity of wildlife habitat.

One possibility might be to selectively patch-cut small tracts and plant swamp white oak and pin oak. The soil requirements and moisture tolerances of these two outstanding mast-producing species are similar to those of red maple. It would be necessary to cut large enough plots to permit full sunlighting of oak seedlings, since both oak species are relatively intolerant of shade. These oaks often inhabit extremely wet sites where there is forest-floor ponding for long periods each year. The localized increases in soil moisture

which would result from the patch-cutting of red maples should not seriously reduce the survival of the planted seedlings.

Another possibility for increasing habitat diversity within large swamp or soft maple tracts might be to introduce American beech and eastern hemlock. Beech mast provides high-nutrient food and dense hemlock foliage furnishes year-round cover for many forms of wildlife. These two species are the most shade-tolerant of all forest trees native to the region and both are moderately tolerant of high soil moisture. Acceptable survival and growth of seedling stock might be achieved within the less swampy soft maple stands if they are selectively thinned. The resulting open canopy would partially transmit sunlight to planted seedlings. The remaining trees would continue to transpire, to some degree moderating excessive soil moisture.

5.105
Proposal 2: Wildlife Research: There are still questions unanswered by past research concerning the relative effectiveness of the many possible woodcock habitat management techniques. It is thought that the 456-hectare (1,127-acre) proposed mitigation area is sufficiently large and diverse, not only for mitigation of woodcock populations, but also for experimental management employing a variety of techniques on large enough plots to be meaningful and for the establishment of control plots for statistical comparison. Additional land on the Turkey Creek "greenbelt" zone within the proposed fence also would be available for the establishment of unmanipulated control plots.

There is also good potential for research into facets of woodcock biology and ecology not directly related to the artificial manipulation of habitat. For example, insufficient data has been generated by past research on the movement or concentration of woodcock onto new feeding grounds during the drier summer months, especially during exceptionally dry years. The effectiveness of wildlife management as a tool for mitigation of environmental impacts is another important field in which more research is badly needed.

5.106
Proposal 3: Gift of Land. Opportunities for hunting, fishing, nature education, and nonconsumptive outdoor recreation would be considerably increased and enhanced by the addition of the tract east of Elmwood Road and north of the Conrail tracks to the public domain.

5.107
Various State and Federal agencies have reviewed and commented on the above terrestrial mitigation plan. The letters of comment are appended to this Final EIS. Their concerns and comments have been

reviewed by the Corps staff, a summary and discussion of their responses follows:

- The long-term integrity of the 1,127-acre management area and the 504-acre "Turkey Creek greenbelt" must be insured.

- Public access to be allowed for controlling deer populations and for loss of recreational opportunities.

- U.S. Steel to agree to plan, fund, and implement a detailed management program in coordination with the Ohio Division of Wildlife and the Pennsylvania Game Commission as appropriate.

The long-term protection of the "Turkey Creek greenbelt" to insure the integrity of the Turkey Creek ecosystem is of vital importance to the entire mitigation plans. Insufficient protection or buffering of this watershed would negate the intention of the entire aquatic mitigation plan which is discussed later in this chapter. The Pennsylvania Game Commission has stated that the Turkey Creek greenbelt and an "eastern greenbelt" which would occupy an area of about 500 acres adjacent to Elmwood Road should be protected from future encroachment. At present, the Turkey Creek greenbelt is the only area within the 2,760-acre fenced-in site to be committed for terrestrial mitigation. It is the concern of the agencies that areas offered as mitigation will be subject to future encroachment.

Management techniques and funding for the 1,127-acre management area and the Turkey Creek 504-acre greenbelt area need to be formalized. The applicant suggested possible management techniques which might be used depending upon the intent and the targeted wildlife species to be benefitted. The agencies have forwarded suggestions based upon their projected plans. The need exists for a formal plan with input from the appropriate State agencies so that a short and long-term stewardship plan can be developed.

The applicant has advised that public access to the Turkey Creek greenbelt, the proposed management area, and undeveloped areas will not be permitted. One exception to this is the 94-acre forested tract east of Elmwood Road and north of the Conrail tracks which is offered as a gift of land. The lack of public access significantly reduces any possibility for recreational mitigation. The lack of limited public hunting to control whitetail deer populations presents two significant problems. The fenced-in deer population could considerably alter vegetation in the Turkey Creek greenbelt area reducing its buffering capacity and mitigative intent. The long-term effect could result in a significant alteration of the Turkey Creek ecosystem as it now exists.

The second problem would arise on the 1,127-acre management area. Management for specific species such as woodcock would benefit the deer. The deer population could rise to the point where habitat degradation would occur. At this point, the effectiveness of the management practices for target species would be significantly reduced.

5.108
The position of U.S. Fish and Wildlife Service is summarized below:

a. U.S. Steel assure the long-term integrity of the 1,127-acre (456 hectare) proposed wildlife management tract and the proposed 507-acre (205 hectare) "greenbelt" on Upper Turkey Creek. Such assurance could take the form of a 50-year restrictive easement, subject to renewal, or some form mutually agreeable to U.S. Steel and the concerned resource agencies.

b. U.S. Steel agree to plan, fund, and implement a detailed management program in coordination with the Ohio Division of Wildlife and the Pennsylvania Game Commission, as appropriate.

(1) U.S. Steel agree to coordinate with the appropriate State resource agencies (Ohio Division of Wildlfie and Pennsylvania Game Commission) in developing a comprehensive program for the wildlife management lands.

(2) U.S. Steel agree to fund and implement the program developed under condition 2a.

c. U.S. Steel agree to allow limited, controlled deer hunting in the wildlife management tract, if necessary, as part of the management program. Heavy browsing by an uncontrolled deer population could seriously reduce the success of vegetative manipulation efforts.

The Corps has no legal authority to regulate the areas which could be subjected to future encroachment or require the applicant to submit outlines for the regulation of such potential encroachments. Therefore, Corps staff recommends that the appropriate resource agencies pursue this matter further in their negotiations with the applicant or that protection from encroachment be provided through zoning ordinances or memorandums of understanding.

Shoreline Modifications

5.109
Construction activities at the Lakefront site may reduce the usage of the nearshore waters of Lake Erie by resident and migratory waterfowl. This problem could be circumvented to a certain degree by

maintaining a vegetative buffer zone between the proposed plant structures and Lake Erie. Accident potentials associated with the spillage of oil or wastewater could be further reduced by moving storage and treatment facilities away from the lake. Installation of the intake and discharge system will disturb nearshore activities of waterfowl. However, such effects could be minimized by restricting construction activities to the summer months when usage of the nearshore waters is lower.

Primary Operations Impacts

Air Quality Impacts

5.110
The sulfate increment added by the plant is low and in itself is not expected to constitute a health hazard. However, when added to already high ambient levels both the "worst case" and annual mean concentration are high enough to correspond to levels reportedly associated with adverse health effects. Total projected concentrations of sulfur dioxide would not adversely effect vegetation over the long term. Similarly, the added ozone increment of the Lakefront Plant, although unquantified, is not projected to raise baseline levels by a significant amount. However, the increase may be sufficient to cause a rise in the incidence of acute or chronic injury of sensitive agricultural crops. Moreover, the interaction of this substance with other atmospheric constituents (e.g., sulfur dioxide or nitrous oxide) could increase the frequency of crop damage at lower concentrations.

5.111
Overall the amount of research data that are available on health and crop damage are rather limited and often vary from researcher to researcher. To determine the effect that certain emissions from the Lakefront plant will have on the human and natural environment air quality should be monitored over the long term, and the incidence health-related effects or vegetation damage recorded. The implementation of such a monitoring program would require coordination among State and local agencies, including health care and planning and environmental agencies, industry, and area residents.

5.112
There presently are two air quality monitoring stations in the site area. These station locations were chosen to adequately characterize the ambient air conditions for criteria pollutants and should reflect the criteria pollutant stress on receptors in the immediate site vicinity. The continued operation of these monitors after the pre-operational baseline data collection should be sufficient to determine the air quality component of the impact of local plant emissions

on vegetation or animal life. Most of the potential stress from ozone or sulfates from contributions to air emissions at the proposed plant and from other sources in the region will be due to long-range transport (greater than five kilometers). The need for another air quality monitor station, devoted to collecting certain specific data (e.g., on hydrogen fluoride and peroxyacetyl nitrate) near sensitive receptors in the lake plain to the east of the plant site, could be established as required. As noted in the 30 August 1977 letter from Dr. Davis to the Corps of Engineers, (5-2) qualitative observations and quantitative sampling of living resources and associated physical factors (e.g., soil) would be necessary to determine the actual magnitude of Lakefront Plant emission impacts. The applicant could collect such data at least one growing season prior to and during plant operations. The location of vegetative study sites would be based on the following criteria:

- Proximity to meteorological/air quality monitoring stations in the Lake Plain;
- Current land use, (i.e., nursery, vineyard, dairy farm, and indigenous woodlands;
- Physical and legal accessibility;
- Presence of potential indicator species of recognized importance (e.g., selected natural vegetation, specialty crops, and pasture grasses).

5.113
If area vineyards were found to be adversely affected by plant operations, the applicant suggests several options that can be exercised to minimize damage. One method involves the regular application of the systemic fungicide, benomyl, which is known to afford some degree of protection from oxidant damage. However, use of this compound requires frequent application in order to achieve proper protection (5-3). The environmental impacts of benomyl are under investigation by the USEPA. Benomyl is not licensed for use nor is it a fungicide that is readily available and presently the Corps does not consider its use as appropriate mitigation. Research on Concord grapevines indicates that the severity of oxidant stipple is related to the amount of nitrogen fertilization, the use of rootstalks, crop load, and soil moisture. The incidence of oxidant stipple was reduced when vines were given large amounts of nitrogen, were rooted on their own stalks instead of grafted, and when flower clusters were thinned. (5-4) Plants grown under some water stress are generally less sensitive to oxidants (5-4) because the more stomata that are closed, the less ozone that can enter the leaf. To minimize oxidant stipple, vines should be given optimal amounts of nitrogen, no excess water, and some chemical protection. (5-3) However, Corps staff does not believe that these measures are a practical form of mitigation. While these measures may minimize oxidant stipple, vineyard owners have advised that they are costly and time consuming.

Right-of-Way Maintenance

5.114
Certain management techniques for road and railroad right-of-way can be used to minimize damage to vegetation. Those rights-of-way cleared of trees could be disked, fertilized, and seeded with a grass/legume mixture to prevent erosion and provide food for any remaining game species to maintain the productive low shrub habitat. Trees could be selectively removed. Habitat improvement could also be achieved through the use of food bearing shrubs and ground cover. Mowing would also keep woody plants out of the right-of-way and might be used in selected areas to develop edge habitat and ultimately increase wildlife diversity along a given right-of-way. Selective burning also helps maintain plant diversity and leaves more insects in an area than do chemical treatments. This technique would not be used on areas exhibiting any degree of topographic relief primarily because of the potential for erosion. (5-5)

AQUATIC BIOTA

Potential Construction Impacts

5.115
The proposed installation of a culvert in the power portions of Turkey Creek will lead to unavoidable adverse impacts on the aquatic ecosystem. The major impacts include: the replacement of 7,500 feet of natural stream habitat with 5,600 feet of culvert which will not provide suitable habitat for phytosynthetic organisms, or most benthos or fish; an overall decrease in the stream length of 1,900 feet, lowered diversity and productivity in the culverted area, and the loss of the upstream pool and riffle areas which provide suitable habitat for salmonids. Culvert construction would be accomplished during the summer months which would significantly reduce the potential for interference with critical life stages of Lake Erie and resident fish species. Preparing the stream for culvert installation would require clearing of streambank vegetation. This would result in increased erosion and siltation which could cover benthos and degrade spawning habitat. Vegetation removal would also result in higher water temperatures which could affect temperature sensitive aquatic organisms and decrease species diversity. Impact of culvert construction can be minimized by restricting removal of vegetation to small areas, working on the stream during periods when much of the bed is dry, and by using proper techniques for reducing erosion and trapping silt. After the culvert is installed, onsite construction activities such as land clearing, grubbing, grading, etc. will commence. These activities, like culvert installation, can lead to increased erosion and siltation. The impacts on aquatic organisms are similar to those described above. Operational phase impacts on

Turkey Creek will occur as a result of the proposed mitigation plan (including the culvert) and from surface water runoff.

5.116
Operational phase impacts which are associated with the proposed mitigation plan include those resulting from changes in stream flow patterns, introduction of Lake Erie water to Turkey Creek, and the loss of some biotic and nutrient input normally derived from overhanging streambank vegetation. The culvert may effect hydraulic perturbations in the watershed (increased flow, drainage, etc.) which could lead to pool desiccation in summer. This would result in the loss of those populations of organisms inhabiting the pool areas. Perturbations of stream flow could also contribute to downstream scouring and erosion and siltation rendering the habitat less suitable for benthos, and fish. Both flora and fauna communities would be disturbed and possibly reduced. The intensity of these impacts will be reduced by proper culvert design and the use of baffles. Detrital material and insects which fall from deciduous streambank vegetation and contribute metabolic nutrients, energy, and food, will be unable to enter the stream section which is flowing through the culvert. This would tend to decrease stream productivity to some extent. The shading effect of the culvert may reduce the water temperatures during the summer months and enhance the suitability of the stream for cold water fish species. The augmentation of flow with Lake Erie waters should not change water quality to any extent that would adversely affect Turkey Creek aquatic biota. However, planktonic organisms from Lake Erie, including ichthyoplankton, zooplankton, phytoplankton, and microbial organisms will be introduced to the lower reaches of Turkey Creek via flow augmentation. Whether or not these changes will prove to be ecologically desirable or significant is difficult to assess at this time. Some of the introduced organisms may thrive to the competitive exclusion of natural creek biota, while others may mutually co-exist or simply die off as conditions preclude survival in the new environment.

5.117
Clearing, grubbing, and grading activities during site construction will cause some increased siltation and sedimentation in onsite creeks, adjacent creeks, and Lake Erie. High levels of solids and siltation could cover benthos, decrease primary productivity, and result in some mortality of ichthyoplankton, young-of-the-year fish, and zooplankton. Materials from concrete batch plant operations or spills of chemicals, solvents, oil, grease, or paints could be carried by runoff to near-site waterbodies adversely affecting aquatic biota. These impacts can be mitigated but not completely avoided. Offshore construction of piers and pier extensions will modify about 22,132 square feet of benthic habitat. Pile driving,

dredging and filling associated with construction of offshore structures will increase turbidity, siltation, and sedimentation. Some benthos will be lost by dredging and covering with silt. High levels of suspended solids during offshore construction could result in the loss of ichthyoplankton, zooplankton, and young-of-the-year fish. Adult and juvenile fish may suffer mortality during underwater blasting activities. Toxic materials in the lake sediments may be released to the water column during dredging. Some of these materials may be ingested by organisms on the lower trophic levels and be passed up through the food chain to higher level organisms. Periodic maintenance dredging of about 220,000 square feet of lake bottom could render the area unsuitable for spawning and prevent reestablishment of benthic communities. Maintenance dredging will result in the loss of fish production in the proposed pier dredging area for the lifetime of the steelmaking facility.

5.118
To mitigate some of the impacts resulting from the installation of the culvert, the applicant proposes stream habitat improvements downstream of the culvert, flow augmentation during low fow periods to facilitate upstream migration of salmonids, and preservation of upstream areas including permission to Pennsylvania Fish Commission to manage the area. Details of the mitigation plan are as follows:

- Stream habitat improvements downstream from the site of the proposed culvert, to be accomplished by U.S. Steel Corporation in accordance with Ohio Division of Wildlife specifications, in an effort to establsih areas suitable for successful rainbow trout spawning. This could involve the creation and maintenance of permanent pools and gravel beds as spawning sites.

- Augmentation of streamflow downstream from the site of the proposed culvert by diverting a portion of the pumped intake water from Lake Erie. It would be possible to maintain year-round flow, thus enhancing the suitability of lower Turkey Creek as salmonid habitat.

- Preservation of the aquatic ecological community and stream-oriented terrestrial communities upstream from the site of the proposed culvert within the U.S. Steel Corporation's property. The undisturbed portions of Turkey Creek and its tributaries would be available to Pennsylvania Fish Commission personnel for aquatic studies and for management of aquatic organisms.

- Permission for fisherman access by boat to the eastern breakwater and to the mouth of Turkey Creek and the contiguous beach area.

The applicant has also stated that if there is a consensus among resource agencies that upper Turkey Creek should be transformed into

a salmonid spawning and growing habitat, the mitigation plan would be as follows: construction of the culvert, and habitat modification and pumped Lake Erie water for flow augmentation to improve the conditions in upper Turkey Creek.

5.119
The aplicant's proposed aquatic management plan for Turkey Creek was reviewed by Federal, State, and local resource agencies and interests. Letters of comment from these agencies are appended to this Final EIS. The State resource agencies generally support the comment of the fish passage culvert plus flow augmentation and habitat improvement although the sections of stream ultimately selected for improvement and flow augmentation have not yet been determined. The U.S. Fish and Wildlife Service has advised that since the culvert would adversely affect the aquatic resources of Turkey Creek on both sides of the State line, mitigation would be required in both States. The U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources (ODNR) have stated that land access to fishing areas (breakwater, mouth of Turkey Creek beach) should be allowed via Lake Road by placing the security fence south rather than north of Lake Road. Access might also be assured by maintaining a road immediately west of the proposed plant fence. Corps staff supports the concept of land access to fishing areas and recommends that the resource agencies pursue this matter further in their negotiations with the applicant. The Corps of Engineers has no legal authority to regulate the access to fishing areas. The U.S. Fish and Wildlife Service advised that they do not endorse the applicant's fish management plan since the applicant has not, at this point in time, provided sufficient justification for not implementing the Turkey Creek "greenbelt preservation" alternative. The "greenbelt preservation" alternative as recommended by USFWS is presented later in this chapter, and in Chapter Six.

5.120
Habitat improvement techniques which could be used in Turkey Creek include:

- Creation of sinuosity or maintenance of existing meanders
- Bank stabilization and management of riparian habitat
- Use of boulders and/or deflectors, gravel, and brush. This would increase cover and substrate variability and stability
- Flow augmentation
- Creation of pools and riffle areas and overhangs along the banks

- Deflectors or baffles, skylights, and resting areas in the culvert

The overall success of habitat improvement will depend to a great extent on protection of water quality from contaminated runoff and erosion, and a culvert design which facilitates fish passage and does not cause extreme perturbations in stream hydrology. However, even with this mitigation there would be an overall loss of some aquatic habitat and some changes in stream flow. The mouth, terminal pool, and lower sections of Turkey Creek should be protected from leachates and runoff to insure that water quality remains high enough for success of the program. The aim of the culvert design is to enable spawning of anadromous fish species in upper Turkey Creek and to keep the lower 1,500 feet of Turkey Creek available for establishment of suitable rainbow trout spawning habitat. Upstream migration of salmonids through the culvert should be feasible. The probability appears good that properly imprinted steelhead trout or other salmonids would swim through the proposed 5,600-foot culvert if the right combination of depth, velocity, resting areas, and other critical elements are provided. An important aspect of fish passage through culverts is the slope. Generally, culverts have been most effective when the slope is less than five percent. In the case of the Turkey Creek proposal, the culvert slope would be about 0.5 percent. Also, there are no drops or rises proposed at either end of the culvert which could impede passage, since the bottom of the culvert will be contiguous with the existing streambed. The applicant's consultant, Fahringer, McCarty, Grey, Inc., has stated that special provisions within the proposed culvert would be needed to facilitate passage of steelhead upstream. The consultant advised that natural stream flows would create sufficient depth for trout passage only on occasions of high runoff. With the required runoff, water velocity generally would be too high for sustained upstream swimming unless slowed artificially. Water velocity may be decreased by use of a baffling system, a series of resting pools impounded by weirs, or by some combination of the devices. Some studies indicate that trout may avoid abrupt changes in light intensity and it may be desirable to provide skylights at intervals along the culvert. There are many special types of fish passage structures currently in use in the northwestern United States and northern Europe, and technology in the field continues to advance. Upstream of the proposed culvert, there appears to be enough gravel of the right size in the eroding drift along the creek banks that potential spawning beds are being created naturally. These occur at widely spaced intervals along the stream bottom. Prior to any final design of the culvert, or final decisions regarding flow augmentation and types of habitat improvements to be implemented, the applicant will coordnate all planning efforts with the appropriate State resource agencies.

5.121
Habitat improvement techniques such as substrate modification, installation of deflectors or placement of large boulders in streambeds could be implemented to increase productivity in presently marginal Lake Erie tributaries. Such action is considered compensatory and would not in any way offset any less of Turkey Creek habitat. For example, habitat enhancement could be accomplished at the mouth of Arcola Creek which, besides Turkey Creek, is the only other cold water stream emptying into Lake Erie in Ohio that retains public fishing access at the mouth. Lake fishing and beach access could be provided by improving and expanding access at Arcola Creek in Madison Township, Lake County. This is not considered viable compensation for primary impacts since the Arcola area is too far (about 30 miles) from the proposed plant site to serve the same user community as the mouth of Turkey Creek. However, this action would result in the preservation and enhancement of the only other State-managed (ODNR) coldwater stream (beach) fishery in Lake Erie. Another option would be to construct a fish hatchery for cold water fish species near Wooster, OH. Again, this action would be compensatory and would not offset the potential loss of Turkey Creek habitat.

Further mitigation for the loss of 7,500 feet of Turkey Creek habitat could be provided by the creation of artificial reefs or breakwalls on the eastern section of the site in Lake Erie. This would afford some shelter for lake species, act as an attractant for game fish, and could be used as a potential area for public access for fishermen from both States. However, this measure would affect downdrift shoreline property by increasing erosion immediately to the east. The artificial habitat would also tend to favor those fish species which utilize rocky areas for spawning over those which require the type of substrate that presently exists in these areas. This would also occur if a jetty were constructed at the mouth of Turkey Creek.

5.122
At this time, the U.S. Fish and Wildlife Service does not endorse the applicant's aquatic resource mitigation plant for Turkey Creek. Essentially, the Service does not feel that the "greenbelt preservation" alternative has been seriously and adequately addressed by the applicant. The "greenbelt preservation" plan specifies the maintenance of a greenbelt of about 390 acres along Turkey Creek and its tributaries from Lake Erie to the Conrail railroad tracks. From the lake to a point approximately 0.75 mile upstream, the greenbelt would include the streambed and riparian land on both sides of the creek approximately up to the 630-foot contour. Upstream from that point, the greenbelt would extend laterally from the streambed approximately to the 640-foot contour.

To accomplish this plan, the USFWS suggests that consideration be given not to displacement of the entire steelmaking complex but rather to alternative plant designs incorporating the rearrangement of facilities in relation to one another.

A possible design could include for example:

- Oil storage relocated 150 meters west
- Sinter plant relocated 200 meters east
- Lime plant relocated 200 meters east
- Powerhouse relocated 100 meters east
- Coal blending relocated 150 meters west and parallel to coal storage area rather than parallel to W1200 grid line
- Coke ovens could be oriented on an east-west axis and centered at W0950, S1250
- Coke oven gas cleaning could be centered at W1100, S1000

The applicant has indicated that the integrity of the "greenbelt" and the water quality of the creek could not be guaranteed. A system of covered conveyors and possibly a bridge or culverted crossing could be designed to reduce heavy particulate fallout. Of course, surface runoff from the developed portion of the plant site would have to be deflected from the greenbelt, collected in settling basins, and treated before being directed to Lake Erie.

The position of the USFWS is that greenbelt preservation is both desirable and feasible. The Corps of Engineers has directed the applicant to analyze the USFWS proposal and to meet with this agency to resolve the issue.

Impacts of Clearing Activities

5.123
Some increase in suspended materials and siltation in bodies of water on and adjacent to the proposed site is unavoidable, but the potential for biological damages due to these increases can be mitigated by a combination of the following measures:

- Avoiding the clearing of riparian habitat (flood plains leaving additional greenbelt areas along stream,

- Backgrading away from all sensitive water bodies and collecting runoff in settling ponds,
- Revegetation of all areas cleared and not taken up by structures as soon as possible, and
- Vegetation of topsoil storage piles where possible, otherwise covering them where vegetation is not possible.

Impacts of Offshore Pipe Installation

5.124
The impacts on benthos and finfishes in the immediate vicinity of the blasting and materials removal during pipe laying represent an unavoidable adverse impact. Similarly, suspension of sediments, (where they exist) during these activities probably cannot be avoided. Silt curtains which do limit redistribution of suspended material, are generally not successful in the presence of strong currents, such as those which can occur along the shoreline of Lake Erie. If this construction is implemented between ice-out and early June or after August, potential adverse impacts on larval and young post larval finfish could be reduced, as major ichthyoplankton concentrations were found in the area beginning from mid-June-early August of 1977. Furthermore, higher summer water temperatures could aggravate stress created by the construction activity between mid-June and mid-August. The post-August period would have advantages over the spring period because of the potential to disrupt finfish spawning activities in the spring period. Blasting impacts can be reduced by using modern blasting techniques which limit the extent of the shock wave, by dispersion of fish from the blasting area by netting, or by using devices which absorb some of the shock.

Shoreline Stabilization Impacts

5.125
Increases in suspended material during construction for required shoreline stabilization probably cannot be mitigated. If additional stabilization is required, riprap has far less impact potential than steel sheet piling, cellular bulkheads, or concrete bulkheads.

Impacts of Pier Construction and Dredging

5.126
The impact potential of pier construction and dredging activities in the spawning and nursery area of Conneaut Harbor is primarily due to resuspension of sediments containing elevated levels of metals which

could elevate oxygen demand. These effects could be decreased by implementation of the following measures:

- Use of silt curtains around dredging and underwater construction activities. This could minimize the redistribution of sediments. The protected nature of the harbor significantly increases the likehood of successful use of these devices.
- Restriction of dredging and construction activities to very early spring, or preferably, fall to avoid adverse impacts on ichthyoplankton or spawning activities and migratory activities of adult fish species.

The new open pier proposal should not alter water circulation patterns or increase sedimentation and reduce oxygen levels. Changes in benthos communities and loss of spawning/nursery habitat from the initial dredging operation cannot be mitigated on-site. Similarly, periodic or permanent loss of spawning habitat due to maintenance dredging of the pier area cannot be mitigated on the immediate site of construction. The applicant's consultant believes that if an additional groin (or two) were constructed to extend into the lake from a point east of the harbor, the lee of such breakwater(s) would be expected to serve as sheltered fish spawning/nursery habitat, especially if riprap structures were used. The applicant also indicates that installation of the groins coupled with the relocation of Turkey Creek to the east of the site would serve as an additional attractant to a variety of lake fish, and would help to stabilize the tributary mouth, which might otherwise be subject to the type of severe alterations during storm events.

5.127
Corps staff does not find this proposal to be acceptable mitigation. The proposed mitigation may result in additional loss of benthic habitat, the loss of Turkey Creek, and would add to the cumulative depletion of littoral drift material possibly resulting in further downdrift starvation and accelerated erosion. Further, a riprap structure would tend to favor those species of fish requiring rock substrate for spawning as opposed to those that may currently be using the proposed dredging areas which contain markedly different substrate types.

Impact of Onsite Transportation Infrastructure

5.128
The impact potential of rail line and road construction includes the adverse effects of increased sedimentation in streams. These impacts

would be minimized by a combination of the following measures:

- Minimal clearing of wetland and riparian vegetation, and
- Bank stabilization and retention structures that prevent erosion into water bodies, if used immediately after clearing has commenced.

During operation, the potential for adverse biological impacts due to runoff from roads and rail beds would be reduced if that runoff were directed away from streams or attenuated and treated (if necessary) in holding ponds. Drainage ditches along road beds can collect such runoff material, but drainage problems could result from long retention times. The applicant will provide holding ponds for runoff from improved areas and the effluent will be seated (if necessary) to control pH and suspended solid levels.

Potential Operations Impacts

5.129
One of the unavoidable adverse impacts occurring during the operation phase involves the operation of the circulating water system. The withdrawal of water from Lake Erie will entrain large numbers of phytoplankton, zooplankton, ichthyoplankton and both juvenile and small forage fish. Mortality of entrained organisms is expected to approach 100 percent. The loss of phytoplankton will have an insignificant impact on the lake ecosystem since effects will be highly localized and phytoplankton turnover times are relatively short. Some minor shifts in zooplankton populations could occur if larger zooplankters are able to avoid entrainment. Any shifts that do occur should be local and would not affect the lake as a whole. The loss of ichthyoplankton and juveniles due to entrainment could have adverse effects on the food chain as well as future year classes of certain Lake Erie fish species.

5.130
The applicant's sampling program identified high densities of rainbow smelt larvae and juveniles, gizzard shad ichthyoplankton, carp, minnow, and freshwater drum eggs, larvae and juveniles in the vicinity of the proposed intake structure. Based on ichthyoplankton densities and the monthly withdrawal of about 1.06×10^7 cubic meters of Lake Erie water, entrainment losses could be high. Additionally, those organisms drawn along with makeup water which are larger than the intake screen openings will be subject to impingement. Although impingement losses were not quantified by the applicant, it is anticipated that yellow perch, gizzard shad, freshwater drum, white bass, white sucker, and smallmouth bass will comprise the bulk of the losses.

5.131
The discharge of heated water and chemicals will also affect aquatic organisms. The thermal discharge may slightly depress zooplankton populations during the warmest months of the year while increasing levels during winter months. A very slight increase in phytoplankton productivity may occur if sufficient nutrients are available. Considering the short duration of exposure to high temperatures, no detectable changes in the phytoplankton or zooplankton communities are expected outside the plant's localized sphere of influence.

5.132
The planktonic form most sensitive to thermal stress is ichthyoplankton. They characteristically have thermal tolerances much lower than zooplankton and phytoplankton. Ichthyoplankters entrained in the discharge plume near the point of discharge may suffer mortality. However, the applicant's proposed use of cooling tower systems and the relatively high discharge velocity will minimize the thermal impact and exposure time. The discharge structure similar to the intake structure is located in an area of relatively high ichthyoplankton densities. The thermal discharge is not expected to have significant impacts on adult fish even during plant shutdowns, spawning periods, or migrations.

5.133
A number of heavy metals, organics, and trace elements will be discharged from the plant. After mixing with lake water for a relatively short period of time, the concentrations of most of these constituents are projected to be within limits acceptable to aquatic organisms. However, due to ambient levels, some heavy metals and trace elements can be expected to continue to accumulate in the tissues of aquatic organisms.

5.134
During the summer months predicted concentrations of ammonia in excess of the sublethal effects level are reached at least 500 meters from the port. The modeled worst case concentration of hydrogen sulfide discharge is at or near short-term lethal concentrations for walleye fry, adult bluegill, rainbow trout fry, and northern pike fry. Flouride concentrations during worst case conditions could be sufficient to affect fish in the effluent itself but levels are reduced to well below acceptable limits at the 250 meter isopleth. Other discharged constituents which may affect aquatic organisms include residual chlorine, cyanide, phenolic compounds, arsenic, cadmium, and total dissolved solids.

a. Measures to Mitigate Impacts Associated with Water Intake Operation

5.135
Impingement losses could be minimized by increasing the size of the screen openings at the intake head and by installing fish diversion systems within the intake tunnel or ristroph travelling screens at the pumphouse. The USEPA has stated that wedge wire screens currently represent Best Available Technology for minimizing adverse effects. Since the issuance of the Draft EIS, the applicant has agreed to install such screens or an equivalent proven technology. Umpingement may be greatly reduced if these screens are properly designed and installed. Intake entrainment impacts on ichthyoplankton can be minimized by locating the intake structure in an area of low ichthyoplankton density. Staff does not believe that the applicant has thoroughly analyzed alternative locations. Additionally, an ichthyoplankton sampling effort sufficient enough to analyze alternate locations further offshore was not performed. Comments on the Draft EIS from various Federal and State agencies supported staffs position regarding intake location. The USEPA advised that additional ichthyoplankton studies should be performed, and that the U.S. Fish and Wildlife Service would provide expertise in this matter. The applicant agreed to perform additional studies as requested by the USEPA. Final design and location of the intake will be determined at a later date through the NPDES permit program, and the USEPA indicates that the additional ichthyoplankton studies will be reviewed prior to final approval. The scope of work for these studies, which was prepared by the U.S. Fish and Wildlife Service, Columbus, Ohio Office, is presented in Appendix D. These studies can be used to refine the location to an area that minimizes ichthyoplankton entrainment.

b. Mitigation of the Impact of the Combined Wastewater Effluent

5.136
To decrease the impact of the waste effluent discharge the outfall could be moved further offshore. The applicant indicates that the deeper location would afford only slightly greater dilution, but might allow the trapping of oxygen depleting effluents in stratified hypolimnitic waters during warmer months. In the past, when extensive portions of the Central Basin hypolimnitic waters have become anoxic, the eastern areas of the basin (near the project site) have been the least affected. However, a decrease in oxygenated hypolimnitic waters during warmer months would in turn decrease already limited Central Basin habitat for those species that require cooler water during the summer, including salmonids. It is anticipated that while the concentration of some parameters would be reduced, the amount of heat discharged would increase. Once-through cooling has been suggested as a method for diluting concentrations of some contaminants in the outfall (see the Water Quality section of this chapter). This would require more than a three-fold increase in

water volume but would not result in any increase in intake velocity. As such, this measure would have the liability of increasing the impact potential for the same type of small fish and plankton impingement and entrainment as the proposed intake.

Predicted "worst case" levels of certain contaminants would be mitigated by the applicant's commitment to divert effluents to one or more lagoons with 24-hour retention time prior to discharge. Levels of HCN, H_2S, NH_4, and some low-molecular-weight organic constituents would be decreased in these lagoons by volatilization. Periodically high concentrations of other contaminants would be diluted by mixing with effluent concentrations at more typical levels. These lagoons are in close proximity to the lake and would likely attract waterfowl. Therefore, wire screens or mesh could be used as covers to prevent any usage of these areas by waterfowl.

Monitoring

5.137
In general, monitoring can be used as a mitigative measure by providing an "early warning" system for adverse impacts. Exact concentrations of some contaminants, especially organic material, and their combined effects, have not been possible to pinpoint in advance with a great deal of accuracy. An operations monitoring program in the site-area waters would better demonstrate the degree of actual impact, and needs, if any, for further mitigative measures. Should monitoring show, for example, that bioaccumulation of a potential toxicant was occurring, or that the combined effects of the various effluents were more toxic than the individually low contaminant levels, the problematic waste stream could be identified and afforded additional treatment as required. Although the applicant has no specific monitoring plans at this time, sampling may be required as a special condition of permits issued by various regulatory agencies.

Onsite Runoff Impacts

5.138
The impact potential of runoff from plant facilities into sensitive bodies of water could be mitigated by the following measures:

- Drainage from all improved surfaces into holding ponds of sufficient capacity to prevent overflow.
- Chemical and/or biological treatment of any contaminated runoff water so that discharge from runoff ponds does not adversely impact Conneaut Creek or Lake Erie biota.

Impacts of Abnormal Events

5.139
Accurate determination of the impact potential of abnormal events is not possible without accurate predictions of their frequency of occurrence. However, measures can generally be taken to offset these effects by reducing the frequency of occurrence of accidents and contigency planning to attenuate accident-related damages. The availability of contingency equipment onsite, for use in case of spills, would impact sensitive water bodies. In the event of spills into Lake Erie from the oil storage facility at least two options are available: Back-up protective dikes in case of failure of the primary dike systems, and placement of the oil storage facility further back from the lake with berms built to cause drainage away from the lake.

Impacts of Secondary Development

5.140
The major adverse impact potentials of secondary development include increased flood plain development sewage treatment capabilities, and construction of access roads to the site. Establishment and enforcement of setback requirements and/or buffer zones around streams would protect riparian habitat. This would minimize water quality impacts on streams due to runoff from construction activities and resultant development. In the event that public sewage treatment capability is not available for some Coastal Communities, or septic systems cannot be used, package treatment plants may be installed which would discharge effluent into adjacent creeks and streams. The impact of residual chlorine discharge on these water courses could be reduced by the use of ozonolysis, rather than chlorination, where economically practicable. Locating the discharges from such package plants on the lake would also minimize water quality impacts or their water courses.

5.141
Individuals involved in planning for growth in the Springfield area have suggested the inclusion of their domestic waste water in the applicant's treatment facilities. If such waste is treated by chlorination, this would increase the potential for adverse biological impact of some trace organic contaminants formed by chlorination. Several other mitigative options to protect streams in the Springfield area from increased sewage waste loads are available. If the Northwest Erie County Sewer Authority Treatment facility is built in time to induce growth, the Springfield area could be connected with this facility. Another possibility is ozonolysis of domestic sewage on or off the proposed Lakefront Plant site, so that Springfield sewage could be discharged from the plant outfall without

increases in chlorinated organics. In general, package treatment plants would have considerably less potential for adverse impact if their discharges are located in the lake, and not on streams.

5.142
Several access roads to the site have been proposed. The following two options for the western access to the plant are discussed in this report: State Line Road access route to I-90 and Route 20 by-pass access road. The potential impact to Conneaut Creek is far greater with the Route 20 by-pass because it involves crossing the main stream and a tributary, and increases the opportunity for growth adjacent to this Lake Erie tributary. The direct State Line access route to I-90 would have less impact since aquatic biota would not be directly impacted during construction. In addition, opportunities for development along this short road could be regulated by U. S. Steel (or subsidiaries) since much of the adjoining land is in their ownership.

PROTECTED SPECIES

5.143
The potential adverse impacts on protected species are expected to be restricted to organisms considered rare in parts of the Regional Study Area but not rare in larger geographic considerations. The only potentially unavoidable impact likely to be measurable in terms of population ecology would be the reduction of the spotted turtle population due to the originally proposed drainage alterations on the proposed project site. The spotted turtle habitat would have been modified or eliminated if the original proposal to divert Turkey Creek to Conneaut Creek were implemented. Since the issuance of the Draft EIS, the applicant has abandoned this diversion proposal. However, should other activities be identified as a threat to this habitat, mitigation could be implemented. The spotted turtle is not a wide-ranging migratory species and would be relatively easy to capture, mitigation of the potential loss at the Lakefront site could be effected as follows: The individuals in the Lakefront Plant site population could be captured when in evidence (e.g., in the early spring, preferably before spawning) prior to the initiation of plant construction and relocated to suitable offsite habitat. Investigation would be needed to ensure that physical (and biological) carrying capacity were adequate.

REFERENCES - CHAPTER 5

5-1 Personal Communication, Professor Dick Medve, Slippery Rock State College, 16 November 1977.

5-2 Personal Communication to Mr. Paul Leuchner, U.S. Army Corps of Engineers, from Donald D. Davis, Associate Professor, Dept. of Plant Pathology, the Pennsylvania State University.

5-3 Kender, W.J. and R.C. Musselman. "Oxidant Stipple: An Air Pollution Problem of New York Vineyards." New York's Food & Life Sciences Quarterly 9(4) December 1976.

5-4 Kender, W.J. and N.J. Shaulis. "Vineyard Management Practices Influencing Oxidant Injury in Concord Grapevines." Journal of American Society of Horticultural Sciences 101 (2): 129-132, 1976.

5-5 U.S. Department of Interior. Fish and Wildlife Services. Transmission Line Right-of-Way Management. March 1977 (FWS/OBS-76/20.2).

CHAPTER SIX: ALTERNATIVES TO THE PROPOSED ACTION

NO-ACTION ALTERNATIVE

6.1
The no-action alternative includes those decisions which would prevent the installation of a culvert at Turkey Creek, construction of an intake and discharge system in Lake Erie, and improvements to piers and raw materials handling systems in Conneaut Harbor. A denial of the permit application by the Department of the Army or a decision by the United States Steel Corporation to cancel or postpone construction of a steel mill at Conneaut, OH, would serve to implement this alternative. The direct result of this course of action would be the elimination of all primary impacts associated with the construction, operation and maintenance of the proposed Lakefront plant. Similarly, the secondary plant induced developmental impacts would not occur, thus, eliminating the need for public service expenditures by the State and local governments involved. However, these communities would lose potential tax revenues associated with the added employment that would be provided by the proposed facility.

6.2
Under this alternative, the applicant would not be able to build a new steelmaking facility, thus, increasing dependence on existing plants which are generally less efficient and more costly to operate. If the Lakefront plant is not constructed, the applicant could continue to seek development of some other site. Available investment funds could also be used to improve existing steel making facilities although retrofitting plants with new process equipment is difficult, costly, and of questionable benefit. The applicant could also use these funds to develop other corporate activities outside the steelmaking category. Should the no-action alternative be implemented, it will be the applicant's responsibility to allocate investment funds in such a way that the future strength and profitability of the corporation is not impaired.

6.3
The no-action alternative will result in the preservation of terrestrial and aquatic habitat both within the confines of the proposed Lakefront plant and the area surrounding the site. Air and water quality would not be impaired beyond that which would occur under baseline conditions. Cancellation of the proposed project would insure that Turkey Creek and adjacent riparian habitat are left intact.

6.4
Further, implementation of the no-action alternative does not guarantee that the local, principal, and regional study area will not

undergo development. Baseline projections indicate that such growth, although slow, will occur and that industrialization could occur which is not directly controlled by Federal or State regulatory permit programs.

CONDITIONS UNDER WHICH THE DEPARTMENT OF THE ARMY PERMIT COULD BE ISSUED

6.5
The Department of the Army permit application for this facility covers only the following activities:

- extension of the east Conneaut Harbor entrance pier, installation of a new unloading dock and a raw material handling conveyor, and related dredging.

- construction of the intake and discharge structures, the pipelines which connect them to shore, and the associated shore protection.

- placement of fill material required for the proposed culvert installation in Turkey Creek.

6.6
Although all of these activities have secondary environmental implications, the Corps of Engineers permit only controls those activities within its regulatory jurisdiction. Regulation of air quality secondary development, land use changes, water quality (associated with point source discharges) are the responsibility of other Federal, State, and local governmental agencies, not the Corps of Engineers. If the Corps permit was issued for this facility it would only relate to those activities listed above.

6.7
Within the Corps regulatory program, activities requiring a Department of the Army permit can be conditioned to insure adequate protection of the public interest. Under these circumstances, it is possible to present a hypothetical case in which a Department of the Army permit could be issued. For example, a permit might be issued if these conditions, in addition to others, are met:

a. No fill is placed in Turkey Creek.

b. All polluted dredged material associated with construction or subsequent maintenance activities is confined in approved upland disposal sites.

c. Land clearing activities are controlled to prevent the addition of sediment to Conneaut Creek, Turkey Creek and Lake Erie.

d. Blasting operations in Lake Erie are conducted in accordance with Corps of Engineers regulations to minimize adverse effects on water quality and aquatic biota.

e. Restriction of water-based construction activities to a specified period of time such that interference with fish migration and spawning activities is minimized.

f. Restriction of water-based construction methodology to minimize water quality impacts. Details to be determined when specific construction plans are available. Suggested restrictions are outlined in Chaper IV in the section entitled, Impacts of On-site Construction.

6.8
The above discussion represents only one hypothetical case under which the Department of the Army permit could be issued. There may be other alternative sets of conditions which would achieve the same purpose, however, these can only be defined on the basis of the comments received on this Environmental Impact Statement.

REARRANGEMENT OF PLANT LAYOUT

6.9
The proposed plant layout has been planned to achieve the most efficient flow of materials during the iron and steel manufacturing process. However, this proposal would preclude the continued existence of Turkey Creek north of the Conrail railroad tracks. To facilitate the set-back alternative for Turkey Creek (described later in this section) the applicant has studied one such rearrangement scheme referred to as Alternative "A". Under this plan the raw materials process operations would be moved further eastward. However, to retain the overall plant design concept of close-coupled uninterrupted flow of material the associated process operations of iron making, steel making, and rolling would also be moved a corresponding distance to the east. The layout of the Lakefront plant under this alternative is presented in Figure 6-1. Preliminary estimates prepared by the applicant indicate that displacements from 2,000 feet to 3,300 feet will be required. This displacement would essentially place all the process operations either in the Pennsylvania segment of the site or on the State boundaries within the site. A displacement of this magnitude would constrict the useful area of the site as the upstream reaches of Turkey Creek turn to the east and parallel the Lake Erie shoreline. The remaining area north of Turkey Creek does not have sufficient space to maintain the orientation of the

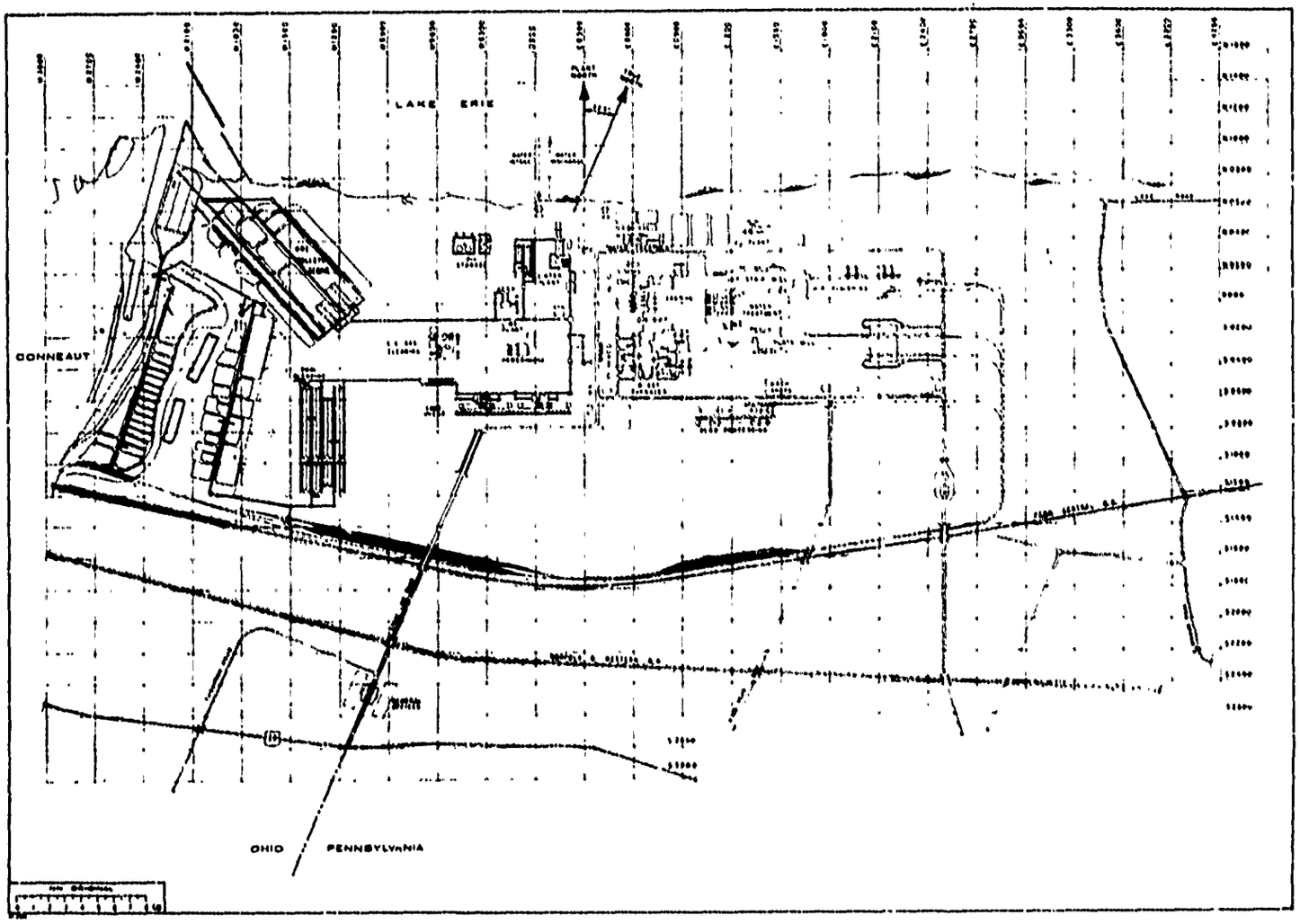


FIGURE 6–1 ALTERNATE PLANT LAYOUT–A LAKEFRONT PLANT

coke plant along its planned north-south axis. If the coke plant were rotated so that its axis was parallel to the main building axis, it could be placed in the available land space between the main building and the creek bed.

6.10
Movement of the raw materials process operations eastward away from the storage areas would require the extension of conveyor systems over a considerable distance and the relocation of transfer points. Overall, the displacement of plant process operations will have certain adverse environmental effects. Specifically, the configuration of this alternative layout places all major sources of emissions in essentially the same square kilometer. This has the result of concentrating both the point source plumes and the low-level fugitive emissions within a confined zone. Thus, no matter what the wind direction, all the emissions would have an enhanced impact on the nearer receptors.

6.11
Under these circumstances, receptors to the east and south of the site would experience additional degradation of air quality which would not otherwise occur if the proposed plant layout were utilized. On the basis of the added costs associated with the relocation of plant structures, the environmental impacts resulting from the concentration of emission sources in one area, and the potential effect plant operations will have on downwind recreational resources, this alternative is not considered practical.

Alternative Process Units

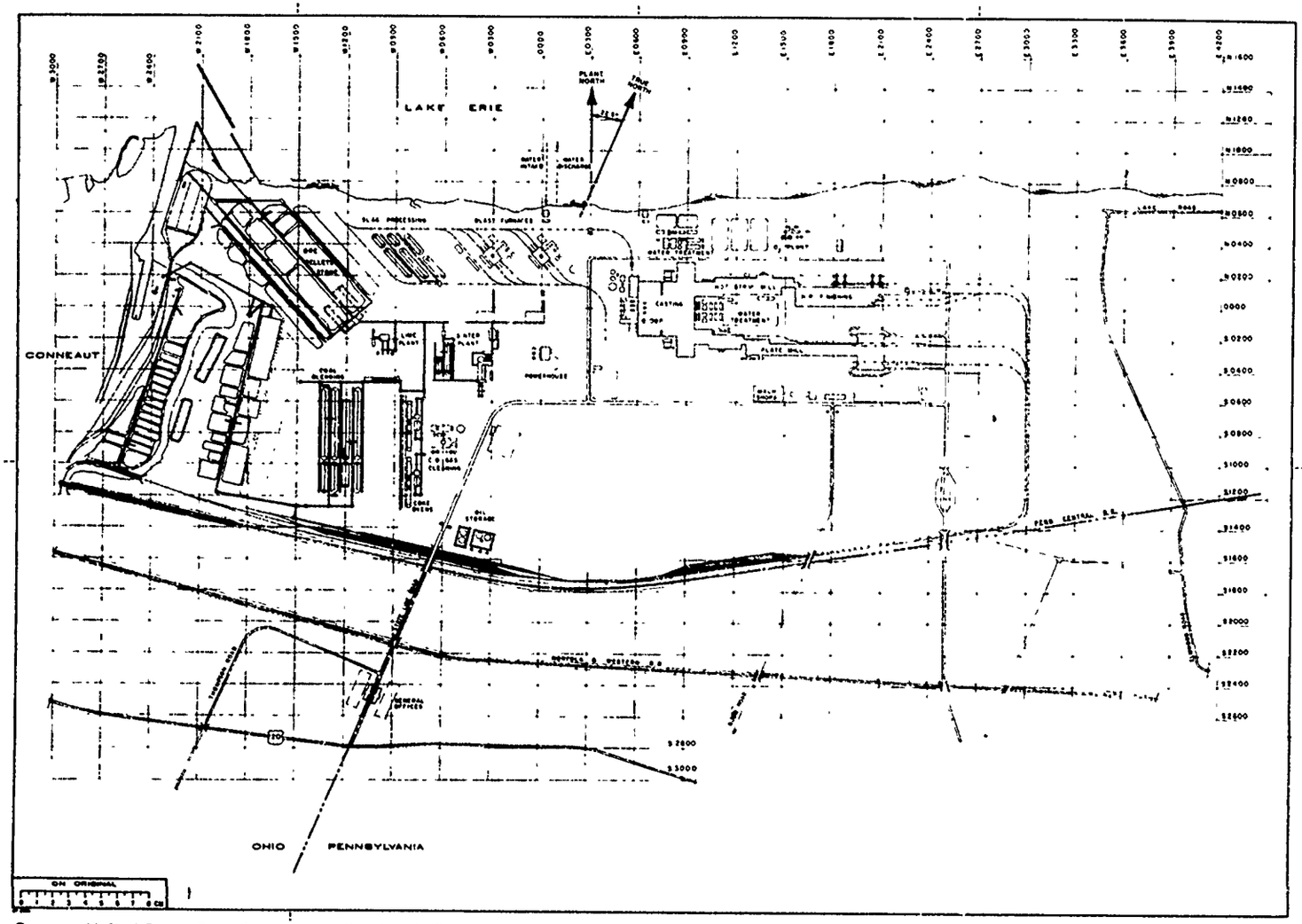
6.12
Another potential alternative plant layout arises from the possibility of major changes in the design concepts of the principal facilities. Examination of the process steps for the proposed plant indicate that, with the exception of the blast furnaces, essentially all the processes follow established and proven production practices. In the past, blast furnaces have been erected as independent facilities separated from dependent steelmaking shops. The molten iron produced by the blast furnaces is tapped into and transferred by enclosed refractory-lined bottle cars to prevent the cooling and premature solidification of the hot metal. The capacity of the hot metal cars typically ranges from one hundred to several hundred tons. In conventional practice, blast furnaces are periodically tapped about six to eight times per day, depending on the size of the blast furnace and the capacity and availability of bottle cars. The loaded bottle cars are then hauled on an in-plant rail network to the steelmaking shops where the molten iron is poured into ladles for charging to the steelmaking furnaces.

6.13
The blast furnace design concept for the proposed plant is different in that it is located close to the steelmaking shop and is basically close-coupled to its operation (refer to Chapter One). If this proposed design concept is not implemented, the plant will need to revert to conventional design layout shown in Figure 6-2.

6.14
Consumption of processed raw materials required for producing the needed quantity of iron would introduce major difficulties in their handling and flow. The separate furnaces, their raw material supply systems, and hot metal bottle car rail tracks would require a substantially larger area than called for in the proposed plant design. The preferred location of the furnace area would be between the raw material processing operations and the steelmaking shops with the available space being the land along the Lake Erie shoreline west of the steelmaking shops and north of the coke plant. The utilization of this area for the blast furnaces would overlap the planned steelmaking shop and cause the latter and the rolling mills to be displaced further to the east. The effect this alternative plant layout would have on the process operations is an increased complexity in materials handling, supply, and iron and slag removal for the separated blast furnaces. It would also introduce the complications of rail transfer of hot metal from each of the blast furnaces to the single steelmaking shop to meet the planned rates of steel production.

6.15
Depending upon the capacity of the bottle cars and the tapping practice for the furnaces, the production schedule would demand the daily shuttling of from 40 to 60 bottle cars between the blast furnaces and the steelmaking shops. These effects add to the burdens of material flow and handling for the proposed plant and could be expected to cause decreased efficiency and increased operating problems.

6.16
The alternative layout associated with the conventional blast furnace concept would also be expected to cause an increase in the uncontrolled emissions from the plant. There are essentially three factors contributing to the increased emissions. One is the volume of fuel usage for the donkey engines to haul the bottle cars back and forth. A second factor is the exposure of the hot metal in the open-topped bottle cars to ambient atmosphere during filling of the cars, transit, and pouring to the charging ladles. This exposure is substantially greater than that from the proposed design concept. In addition, the expected location for the blast furnaces is about one kilometer to the northwest or within the block area of the raw materials processes. Thus, the emissions from these operations would have correspondingly greater impact on the receptors at the western



Source: United States Steel Corporation, Pittsburgh, Pennsylvania

FIGURE 6–2 ALTERNATE PLANT LAYOUT–B LAKEFRONT PLANT

perimeter of the plant adjoining the eastern edge of Conneaut. The social, economic, and environmental implications of this plan are serious, therefore, not considered a viable alternative.

Alternative Plant Operation Concepts

6.17
The production of steel consists of the processing of raw materials into intermediate forms for smelting to iron which is then refined to molten steel. After solidification, the steel is worked to a variety of mill products for industrial markets. At each of the major process steps, there are several process approaches, which may be employed, as shown conceptually in Figure 6-3.

6.18
There are essentially two basic concepts for steelmaking. The predominant one is the integrated plant that includes both the conversion of mineral raw materials and coal to produce iron and the subsequent refining of the iron to steel which is then hot and cold worked to any of a variety of mill products.

6.19
The other concept for the production of steel is known as the semi-integrated or non-integrated plant. Under this concept, scrap steel is remelted and refined directly to prime quality. This avoids the step of processing mineral raw materials and coal for the production of iron. This concept takes advantage of the supply of scrap steel which is available as a result of steel fabricating operations, disposal of obsolete equipment and machinery made from steel, and as a by-product of mill working operations associated with steelmaking.

6.20
By avoiding the need for processing raw materials, this alternative concept for steelmaking is able to begin with the melting of scrap as the first process step. Historically, the availability of scrap led to the invention and development of the reverberatory or open hearth furnace. Scrap could not be charged to the Bessemer converter and thus was accumulating as waste. Over the course of time, the open hearth furnace practice was adapted to refining of molten iron and combined with additions of steel scrap and became an essential element in integrated steelmaking. A somewhat later development for converting scrap to steel was the electric arc melting furnace. This was originally invented for production of special quality alloy steels and has subsequently been adapted to production of basic carbon steels.

6.21
A semi-integrated plant based on the electric arc furnace is an alternative concept which could be employed at the proposed Lakefront

plant. Utilizing this concept of steelmaking, the raw material requirements would be substantially changed, assuming the plant is to have the same planned liquid steelmaking capacity. The requisite raw material would be steel scrap in amounts about equal to the planned rate of product shipment, plus about 10 percent extra to allow for in-plant process losses. Thus, the plant would require about 7.0 million tons of scrap annually. Scrap generation during plant operations would have no significance since it would be only an internally circulating load, adding the penalty of processing costs, energy consumption, and environmental burdens for its processing. The annual scrap requirements for this plant alternative are so large that they alone would constitute almost 20 percent of the recent scrap shipments to domestic iron foundaries and steel plants and more than 30 percent of the recent scrap shipments to semi-integrated plants for production of basic carbon steels. This high scrap requirement would have a substantial impact on the availability and distribution of scrap to the entire iron and steel industry. The short-term effect would be a drastic escalation of scrap prices, as occurred in 1974 when scrap reached record price levels as supplies became limited. The long-term effect would be an acceleration of the impending national deficiency of scrap which has been forecast by several observers and a concomitant loss of financial viability among existing smaller scrap users unable to absorb the continued high cost of scrap. Moreover, the foreseeable high cost of scrap would threaten the economic viability of the proposed plant. One result of the semi-integrated alternative would be a change in the characteristics of the emissions and effluents from the plant. The raw material stockpiles would change from essentially inert iron ore, pellets and limestone to scrap from commercial sources which can be expected to contain contaminants such as water-soluble and insoluble oils and lubricants, metallic coatings of tin, zinc or chromium, and any of a wide range of metallic alloy additions. Thus, the environmental contaminants from raw materials would change from particulate air emissions to soluble and insoluble water pollutants. The semi-integrated plant would not have the raw material intermediate process operations such as the coke plant, lime plant, and sinter plant, so that emissions and effluents from these would be eliminated. Similarly, there would be no blast furnaces so that their pollutants would also be avoided. It is believed, however, that the emissions from either steelmaking process would be roughly equivalent so that the alternative plant concept would be essentially indistinguishable from the proposed plant concept, based on environmental effects.

6.22
However, the alternative plant concept causes an additional environmental burden. The primary energy supply for the proposed plant is in the form of coke oven gas, coke, and blast furnace gas, and is wholly derived from the coal which is the raw material for the coke

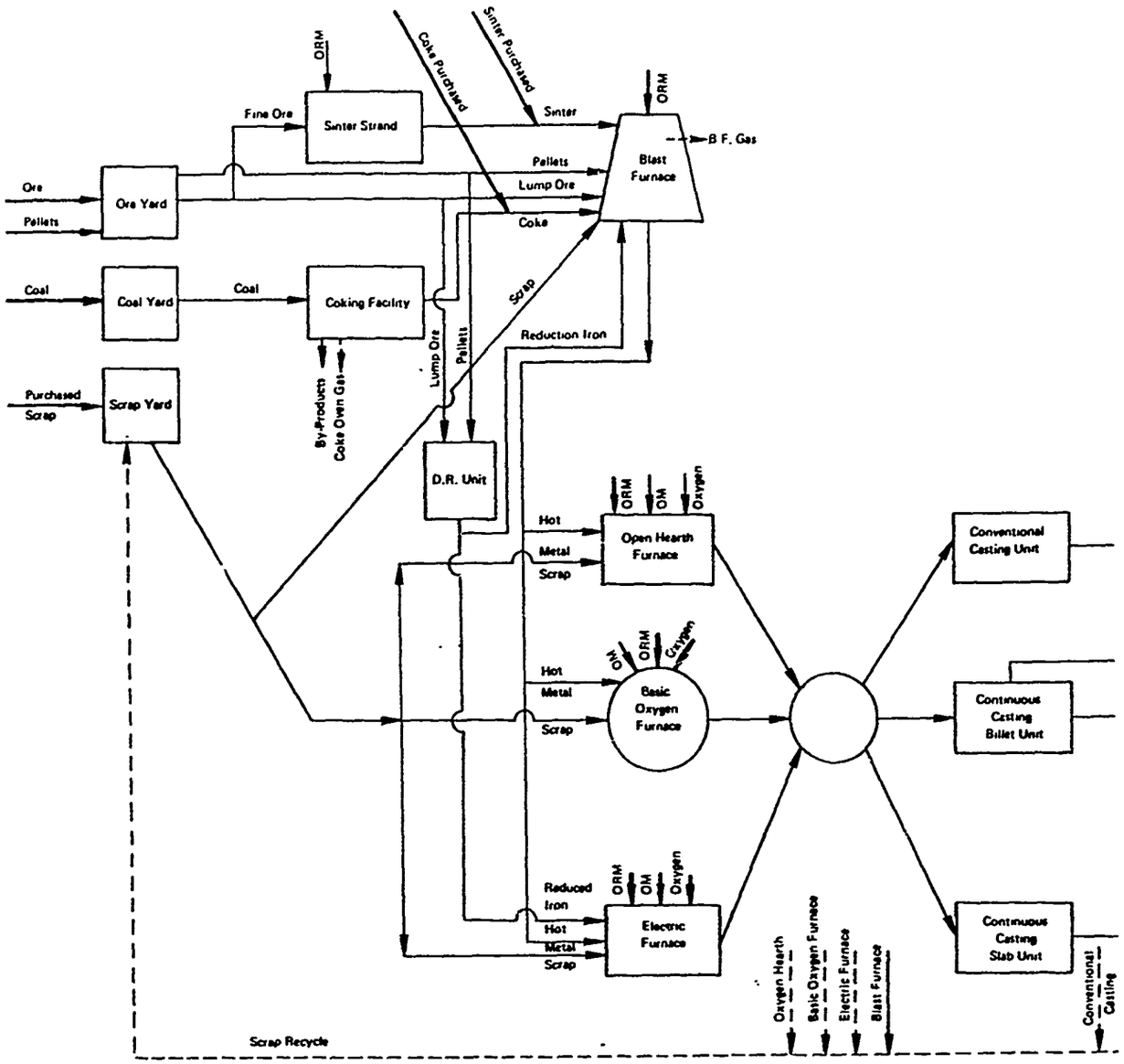
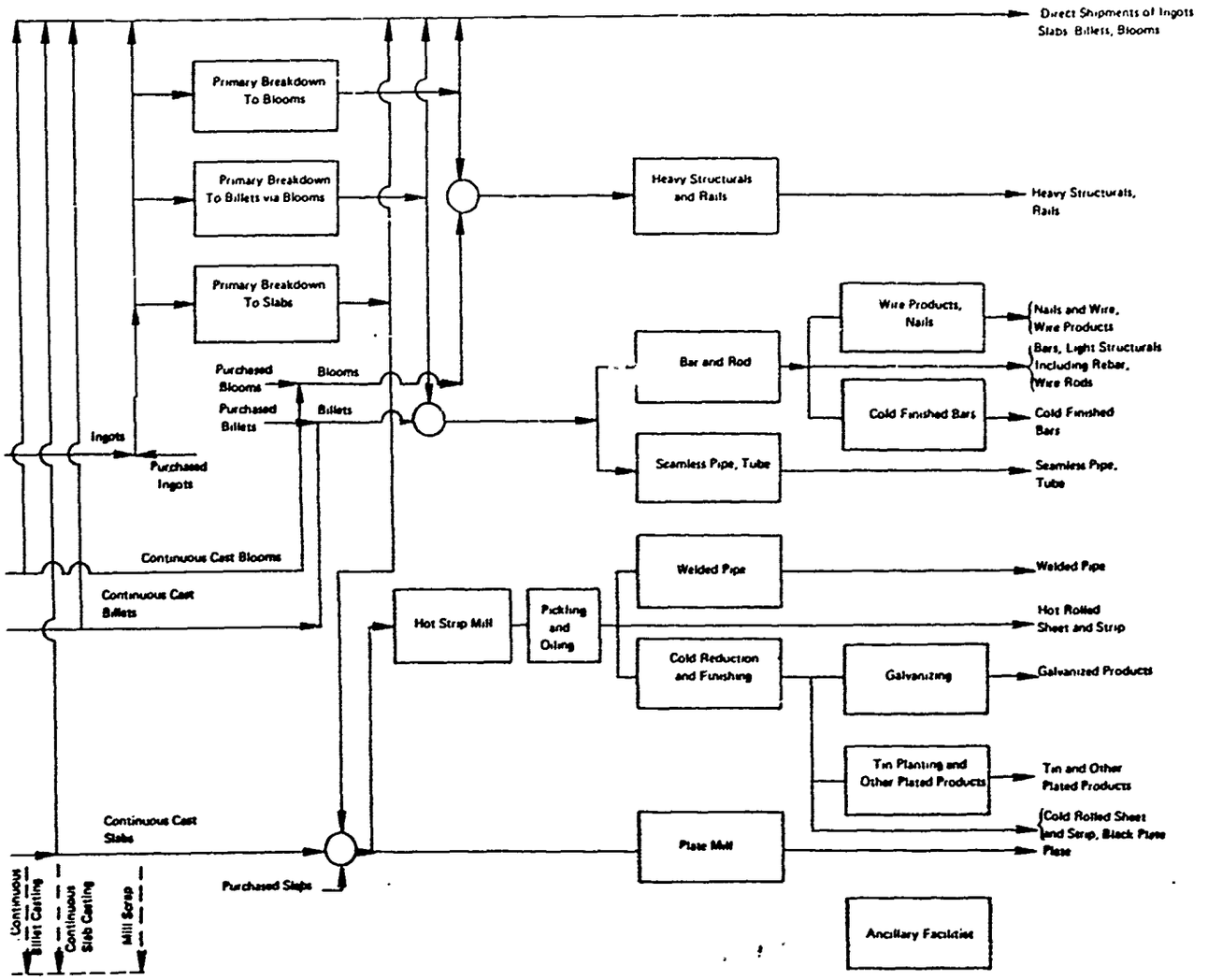


FIGURE 6–3 ALTERNATIVE PROCESS STEPS AND PROCESS UNIT RELATIONSHIPS



Legend:

- In-Plant Flows
- Scrap Recycle
- Flows From Outside
- Flow Streams Joined To Following Process Unit

Notes.

(1) ORM refers to other *raw* materials and includes items such as fluxes.

(2) OM refers to other metallics and includes items such as ferroalloy additions.

(3) Each box, though representing a process unit, may include several steps.
For example: Coking Facility: Includes coke ovens and by products facility.
Primary Mills: Include billet conditioning and slab preparation.
Plate and Rod Mills: Includes finishing.
Pipe Mills: Include galvanizing and finishing.
Wire Products: Include annealing, galvanizing, straightening, cutting and finishing
Tin Mills: Includes coating and finishing.

(4) At the right-hand end of the figure are the different categories of carbon steel products shipped by the U.S. iron and steel industry.

(5) Process units 11, 12, 13 would include vacuum degassing operations when found in a plant.

plant. The alternative plant concept would have no on-site source of energy and would have to purchase all its energy from external sources, primarily local public utilities. Electric furnace melting practice requires about 600 kWh/tonne (550 kWh/ton) of raw steel. A nominal energy conversion rate for a central power station would be about 10,000 Btu/kWh. A fossil fuel-fired power plant, in conformance with New Source Performance Standards, would have minimum emissions of 0.1 lb of particulate and 1.2 lbs of SO_2 annually or instantaneous emission rates of 59 gm/sec and 706 gm/sec, respectively. Compared to the rates of emissions from the proposed plant, these rates of emissions for the furnace melting power alone amount to about 25 percent of the particulates and almost 200 percent of SO_2. Although the alternative plant concept appears to offer some potential for reduction of particulate emissions, it would substantially increase the SO_2 emissions. In addition, the plant itself would no longer have access to the relatively clean coke oven gas, blast furnace gas, and Q-BOP off-gas so that these energy supplies for continuous casting and re-heating furnaces would also need to be replaced, presumably by No. 6 oil with its own penalty of increased particulates and SO_2 emissions. The preceding discussion of the impact of the alternative semi-integrated plant concept on the national supply and distribution of scrap, and the concomitant environmental effects suggests that, for the equivalent annual production of steel, this alternative has limited potential.

Alternative Sites

6.23
During the review period for the draft Environmental Impact Statement, various governmental agencies, public and private environmental groups, and members of the general public demanded that an extensive, in-depth evaluation of possible alternative sites for the construction of the proposed Lakefront plant be conducted. The Corps of Engineers, because of these demands, requested that the applicant study the alternative sites evaluation further. In addition, the Corps retained the services of a private consultant to work with Staff to independently identify and analyze suitable brownfield and greenfield alternative sites. Therefore, Staff has revised the following alternative section into three parts: (a) Applicant's Original Proposal; (b) Applicant's Revised Proposal; and (c) Staff's Analysis of Alternative Sites.

a) Applicant's Original Proposal

6.24
At present, the applicant does not own a single contiguous land tract on the Great Lakes which is large enough to serve the needs of a steel plant the size of the Lakefront facility. The applicant does

own sufficient land in the vicinity of their raw materials mining areas. However these sites are located well away from existing steel markets, do not have an adequate water supply to support process functions, and are generally remote in terms of surface transportation networks. Under these circumstances the applicant has narrowed the analysis of alternative sites to those where existing steel manufacturing facilities are already in operation (brownfield sites). Four brownfield locations have been analyzed by the applicant as potential alternative sites for the proposed Conneaut Steel Plant. These include Fairless Hills, PA; Lorain, OH; Baytown, TX; and Youngstown, OH.

Fairless Works

6.25
Establishment of a new plant adjacent to the Fairless Works is economically disadvantageous compared to the Conneaut site. For example, the cost of transporting raw materials such as iron ore, coal and limestone to Fairless will be higher than the proposed Lakefron plant location. Secondly, the Fairless site is not well located with respect to established hot-rolled sheet and plate markets since these are the only products manufactured at the Lakefront facility. Fairless is on the eastern edge of this market, 80 percent of which is concentrated in the northern portion of the midwestern United States. Consequently, shipment of product from the Fairless site to facilities owned by the applicant or other customers in the midwest for further finishing would be much more costly. Even if a new plant were constructed at the Fairless site it is unlikely that high volume customers (i.e. automobile stamping plants) would relocate to nearby areas. The existing facility at Fairless already maintains a portion of the steel plate market which already exhibits excess capacity in the eastern United States. Thus addition of a plant similar to the proposed Lakefront facility would merely serve to aggravate this condition.

Lorain-Cuyahoga Works

6.26
The Lorain-Cuyahoga works occupy a favorable location with respect to hot-rolled sheet and plate markets. However, establishment of a plant similar to the proposed Lakefront facility at this location will present several problems. First, the physical configuration of the Black River channel will restrict raw material shipments to such a degree that total annual tonnage requirements may not be met. Secondly, only 365 acres of land is available at this location which is not sufficient to construct a steel plant the size of the proposed Conneaut Facility. In addition, the available land is divided by the Black River so that even if the acreage was adequate, plant construction would be very difficult. Thirdly, the product mix for the

Lakefront facility does not mesh well with the Lorain Works, which manufactures seamless pipe and hot-rolled bars requiring various degrees of finishing.

Texas Works

6.27
There is sufficient land at the Baytown site to construct a steel manufacturing plant similar in scope to the Conneaut facility. Although this area is ideally located with respect to the plate market it is not a suitable location for hot-rolled sheets and coils. If the proposed facility were built next to the Baytown Plant the majority of its output (four million tons of hot-rolled sheets and coils) would have to be shipped over long distances to other U. S. Steel facilities and customers bordering the Great Lakes. Under these circumstances additional transportation costs would be incurred which would raise the cost per ton of plant product.

Ohio Steel Works

6.28
During the course of this analysis, various groups suggested that the Lakefront Plant be moved to the Ohio Steel Works site in Youngstown, OH, and that some of the rolling operations be performed at the Lorain-Cuyahoga Works in Lorain, OH. The applicant in reviewing this alternative has found it to be unacceptable for the following reasons:

- The assembly costs of raw materials are much lower at the proposed Lakefront plant site in view of its proximity to a deep water port and the availability of facilities for the handling and storage of materials.

- Construction costs at the Ohio Steel Works would be substantially higher in view of the extensive razing operations required.

- Space at the Ohio Steel Works is limited to about 485 acres. The entire Youngstown district, including the Ohio Works, the MacDonald Works, and an adjacent landfill area totals only 845 acres. The proposed Lakefront plant facilities require development of approximately 1,290 acres exclusive of the existing, and proposed, raw materials handling area.

- The production cost advantages conceived in the proposed Lakefront plant involve an in-line design oriented toward savings in materials handling and

transfer operations. These savings would be lost if operations were split between the existing Conneaut unloading and storage facilities, the Ohio Steel Works, and Lorain.

b) Applicant's Revised Proposal

6.29
The applicant's future plans indicate the need for a large-scale steel plant such as the proposed Lakefront Plant. Projections for future steel demand show that the domestic consumption of steel will continue to grow for the balance of this century (refer to Chapter One). Current annual domestic production capability has been estimated to be approximately 158 million tons of raw steel, which yields approximately 110 million tons of finished mill products. Assuming that imported steel remains at its current rate of 20 percent of domestic steel consumption, domestic capability would need to be increased by approximately 30 million tons to meet the projected demand of mid-1980's. The steel industry estimates that 60 percent of this requirement could be obtained from roundouts of existing or "brownfield" plants with the remaining 40 percent coming from new "greenfield" plants. These increases in capability will be in addition to the replacement of obsolete facilities. The applicant has been following all of the recognized paths for installation steelmaking capability, depending upon specific conditions at its individual plants. Examples of these efforts include a greenfield plant at Baytown, TX; roundout expansion at Fairless, PA; and replacement of equipment to increase raw steel capacity at Fairfield, AL.

6.30
The applicant surveyed its existing plant facilities to identify whether appropriate sites were compatible with installation of an economically viable sheet steel production plant. The survey examined the applicant's sites at Youngstown, OH; Lorain, OH; Fairless, PA; Baytown, TX; and Chicago, IL, as principal potential alternative sites. The survey reviewed these sites for the product characteristics and market volumes of the respective regions, the supply/demand situation, the accessibility and cost of transportation to reach the markets, the adequacy of land available at each site, the local energy resources, the supply of labor by skills and quantity at each location, and probable cost at the site for assembly of raw materials such as ore, coal, and limestone. The existing plants were also examined for the compatability of their current product mix and production operations with the planned production of hot-rolled flat products and for the feasibility of the existing production layouts to incorporate a new hot-rolled flat product facility as planned for Conneaut. The findings of the survey are summarized in Table 6-1. The applicant stated that none of the existing plants appeared to be a reasonable alternative site.

6.31
The applicant feels that an alternate location should be close to the major market region of its projected product because it is this market structure which establishes the need and justification for the proposed steel sheet and plate production. Since this market is concentrated along the southern shores of the Great Lakes and extends to the south, the applicant initiated a search for a site within the market region using specified site features as elements for screening. The features that a site should have are derived from the nature of the proposed plant. The plant itself is to produce steel sheet and plate at annual production rates of 6.4 million tons. This entails the consumption of approximately 18 million tons of raw materials. Thus, a proposed site would presumably be a greenfield site since no existing plant site, other than Conneaut, has adequate physical capacity to handle this magnitude of increased materials, handling, and processing. This would mean the developed area together with the supplemental space for direct plant support would require a basic area of about 2,000 acres. In addition, allowance for receiving and storage of raw materials which already exist at Conneaut with the Pittsburgh and Conneaut Dock Company and Bessemer and Lake Erie Railroad facilities, would also be needed. Almost any other new site location could be expected to require as much as an additional 1,000 acres for stockyards, so that a contiguous level area on the order of 3,000 acres would be needed for an alternate greenfield site.

6.32
An existing plant site, however, would have some of the requisite supporting facilities so that the area requirements might be reduced to approximately 2,000 acres for the developed plant space and direct support area. The applicant's plant sites, shown in Table 6-2 are seen to have extremely restricted space available for accommodating the proposed facilities. In fact, only Gary Works, with about 1,300 acres in two separated blocks of vacant area, would appear to approach being adequate; Fairless Works with about 1,200 acres in two separate blocks of vacant area, might be marginally adequate.

6.33
In addition to providing adequate space, the site should have access to deep water for receiving raw materials by ship at an average daily rate of 50,000 tons, and access to a multiple railroad network for shipment of steel products at an average daily rate of 20,000 tons. Other criteria for the site requires that an adequate supply of energy and labor be available.

6.34
Deep water access might be realized at a number of locations around the Great Lakes, in or near the market region. However, the need for

Table 6-1

Alternate Location Economic Considerations
New Greenfield Plant

SIGNIFICANT ECONOMIC FACTORS CONSIDERED	THE CONNEAUT LOCATION	YOUNGSTOWN, OHIO	LORAIN, OHIO	EAST COAST - USA	SOUTHWEST - USA	GENERAL - US
MARKET - VOLUME - CHARACTERISTICS	• 30 to 35% of total steel market contiguous to area. • Concentration of automotive industry -- heavy industrial -- also consumer goods. • Large customers -- large order quantities. • Direct mill to consumer volumes. • Also smaller support industries.	• About the same as the Conneaut location.	• About the same as the Conneaut location • Slightly more favorable to the large concentration of automotive customers.	• 13 to 15% of market. • Slower economic growth. • More related to heavy steel tonnage products • Smaller customers - smaller ordering quantities. • Less concentrated • More distribution indirect through warehouses • More imports.	• Now over 10% of market • Growing economy and markets • Substantial inroads of foreign steel • Heavy concentration of oil and gas industry and petrochemicals • More pipe and plate oriented market • Relatively small sheet market • Less industrial-oriented • Smaller customers - more indirect distribution through warehouses	• About 20% directly contiguous to area • Generally comparable similar to Conneaut • Heavy industry and light also • Concentrated, large customers a • Major markets are East and South of the general area
SUPPLY/DEMAND RELATIONSHIPS	• Concentrated demand in Detroit/Ohio areas considerably greater than local supply for light flat rolled products • Deficit plate area.	• About the same as the Conneaut location	• About the same as the Conneaut location -- slightly more favorable to concentrated Detroit market.	• Excess light flat rolled capacity for local market • Plate market about in balance.	• Local market could not support modern strip mill • Plate supply/demand about in balance	• The concentration of capacity around Chicago is greater than local market - must ship East • Excess plate capacity with new Burns Harb r mill
TRANSPORTATION - TYPE AND COST TO REACH MARKET	• Deep water port with facilities to handle large volumes of raw materials. • Good road network -- East, West and South. • On line with three major railroads.	• Lacks deep water port for incoming raw materials -- would require trans-shipping at lake ports with additional handling and transportation • Out-bound freight - about the same as Conneaut. • On line with four major railroads	• About the same as Conneaut EXCEPT • Large boats cannot be handled in the Black River. • Out-bound freight about the same as Conneaut -- could have slight cost advantage. • On line with four major railroads	• Port facilities at "Fairless" -- mainly for foreign raw materials. • Fairless location on line with only one major railroad • Out-bound would have to move west to reach market with increased freight cost	• Port facilities at Texas Works would require considerable development and dredging to handle raw materials • On line with two major railroads • Long distance from concentration of sheet market with increased freight cost to reach markets	• Deep port facilities - would have to be extended or developed • Good rail network with 14 major lines serving area • Considerable pr do t would move East and South • Coal moves by railroad
COST OF ASSEMBLING RAW MATERIALS ORE COAL STONE	• High grade pellets delivered by own boats from Duluth. • Coal delivered from Ohio Valley by excellent railroad service. • Stone delivered by own boats from Great Lakes source. • Low cost, high-quality delivered material.	• High cost due to extra handling and transportation -- not on deep water -- applies to both ore and stone • Coal would be delivered by rail.	• Same location features as Conneaut EXCEPT • Port is too small to handle large ore boats -- less economy of size for ore and stone. • Coal delivered by rail slightly longer distances.	• Port at Fairless is long distance from affiliated raw materials. Would need to rely on foreign or off-shore sources • Existing port at Fairless inadequate for additional volume the size of the ore vessel new late plant.	• No local source of ore - coal • Port facilities at Texas Works inadequate for raw materials • Would need to rely on t rotgn or r sources at far distance	• Generally good location for assembling all three basic raw materials
LAND AVAILABILITY	• Own sufficient good property.	• Present locations physically completely inadequate -- plants are separated. • Shuttle vn required. • High cost of dismantling. • No known suitable site available. • Not on water.	• Present location limited and would not allow for future expansion. • Land is divided by a river • Products at present plant not complementary with sheets and plates. • Need space for expansion of present product.	• Land is available at the Fairless location	• Land is available at the Texas Works location -- but would require development of port at considerable cost	• Existing owned property at Gary only marginally adequate for plant the size of Conneaut • No available area at South Works
ENERGY AVAILABILITY	• Over 1/3 will be supplied from own coal. • Electric l requirements can be met by facilities of local u ility companies.	• Generally available, but limited. • Would require significant development either within the project or by public sources.	• Same comments as Youngstown • Coal cost and transportation cost are the key factors - coal is generally available		• No local source of coal • Would not consider oil for primary energy for a new steel plant	• Same comments as Youngstown and Lorain except for availability of oil whose cost delivered to h st
LABOR AVAILABILITY QUANTITY SKILLS	• Would require influx. • Generally good appeal area from Pittsburgh, Youngstown, Cleveland. • With new agreement, skilled labor willing to move, retain continued service, new plant seniority base. • Farm wage cost in all areas.	• Good availability • History of steel operation. • Skills generally available. • By time new plants were in operation, current skilled labor force probably relocated. • Difficult to draw in new labor to the area.	• Comments about the same as Conneaut • Influx of new labor would be required -- not to same extent as Conneaut. • Would not draw quite as well from Pennsylvania areas.	• Would require major influx of new labor -- similar to original development. • Not strong skilled drawing area. Philadelphia is not an industrial city, not in local area.	• Would require major influx of new labor • Would have to draw skilled labor from long distances • Would have some drawing appeal to "Dunkels"	• Fair ave lability • Would n t draw well from thos are a • High industrial area skills a re available

Source: U.S. Steel Corporation.

Table 6-2

U. S. Steel Lake Region Plant Site Areas

Site	Area Occupied	Est. Area of Vacant Blocks	Present Use
Youngstown, OH			
Ohio Works	265	222	Adjacent to plant used for slag handling
McDonald Works	251	128	Adjacent to plant, miscellaneous uses
Lorain Works, OH	1,737	300	Across river from plant.
			Adjacent to plant, used for slag handling and storage
Fairless Works, PA	1,650	700	Adjacent to plant on far side away from river, used for Industrial Park
		500	Undeveloped island in river with natural habitat.
South Works, Chicago, IL	585	0	N/A
Gary Works, IN	2,152	550	Adjacent to plant on west, used for slag handling.
		750	Consists of two blocks adjacent to plant on east, used for miscellaneous storage
		(360)	East of plant, recently transferred for public lands for dunes park.

SOURCE: U. S. Steel Corporation

shipping the product to market limits the feasible sites to the southern lakeshore districts, where several railroads and major interstate highways provide service. Given these criteria, and the land requirement for the plant itself (including raw materials' stockyards areas), it is reasonable to expect that comparable or larger primary impacts would be associated with any other Great Lakes shoreline site.

6.35
Air quality considerations for the respective sites were separately reviewed. The environmental considerations for air quality were screened in the regions associated with the six existing U. S. Steel Plants. The five criteria pollutants at each plant location (total suspended particulates (TSP), Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), and Photochemical Oxidants (O_X)) are shown in Table 6-3. Plant sites located in an area designated to be attainment for TSP includes Fairless Works. (Fairless Hills, Bucks County, PA), Lorain Works (Lorain, Lorain County, OH), and Texas Works (Baytown, Harris County, TX) In addition, Fairless Works, Texas Works, and South Works (south Chicago, Cook County, IL) are in attainment for SO_2. Thus, except for Fairless Works and Texas Works, other sites could be environmentally unacceptable because of inability to meet the primary NAAQ Standards for either TSP or SO_2.

6.36
Installation of the proposed production capability may be accommodated under USEPA's Emission Off-set Policy. However, the installation in a nonattainment area of a major new source of TSP and SO_2 emissions projected for the proposed plant, wherever located, would require corresponding emission off-set reductions. The nonattainment regions are already under intensive pressure to be brought into attainment and may not have adequate off-set potential to accommodate the projected new emissions. One or another of these same sites might be an acceptable alternative, were existing facilities shut down. But this is contrary to the condition that all of the existing steel capability now operational is needed if the country is going to avoid a steel supply crisis within the next decade. Therefore, the shut-down of existing facilities to make room for new units only bcomes a case of replacement without making adequate, provisions for increased capability to meet the projected growth in demand. Therefore, on the basis of environmental consideration for air quality for TSP or SO_2, the areas of Youngstown, OH, Lorain, OH, and the Chicago area, are not considered to be reasonable alternative locations for the facilities proposed for the planned new raw steel production of 7.5 million tons.

6.37
In order for other potential sites to accommodate the proposed production capability, the same feasibility factors that were examined

Table 6-3

Attainment Status of Alternative U. S. Steel Plant Sites

Site Locations	USEPA AQCR No.	Non-Attainment Areas for Criteria Pollutants*			
		TSP	SO_2	O_x	CO
Youngstown, OH	178	X	X	X	X
Lorain, OH	174	*	X	X	
S. Chicago, IL	67	X		X	
Gary, IN	67	X	X	X	
Fairless, PA	45			X	
Baytown, TX	216	*		*	

NOTES: X Non-attainment
* Plant site in atainment area abuting non-attainment area.

SOURCE: Federal Register, Vol. 43, 8962-9059, March 3, 1978

earlier by the applicant, would be pertinent for other potential locations. The handling requirements for the quantities of raw materials to be received ,demands consideration of deep water access, either to the Gulf Coast in the south or to the Atlantic Coast in the east. Along either coastal area, good deep water harbor sites are generally highly developed. The interjection of a new major source could face a significant off-set requirement as discussed above. In general, however, even if such locations were environmentally acceptable, serious market and economic problems arise concerning the feasibility being suitable location for the proposed steel plant.

6.38
The applicant stated that various locations were examined and came to similar conclusions for both the southwest and the east coast. In either region, land is or may be available, however, the ports are great distances from adequate sources of ore, forcing a plant to import foreign ore or obtain ore from distant domestic sources. Metallurgical coals are available in the eastern states, marginally available in the southeast, and unavailable in the southwest. Neither of these areas have adequate regional markets that could support a high-producing hot strip mill. Hence, the product would need to be shipped to the Great Lakes market district and thus incur severe transportation cost penalties. As a consequence, each of these regions suffer from one or more deficiencies under current market demand/supply conditions which would prejudice the economic feasibility of the increased production at the planned rate within the region. Hence, no site in these regions is considered by the applicant to be a viable alternative site to the proposed Lakefront Plant.

c) Staff Analysis of Alternative Sites

6.39
Fry Consultants, Inc., 1818 Market Street, Philadelphia, PA, was retained by the U.S. Army Corps of Engineers, Buffalo District, to provide an independent identification and evaluation of suitable alternative sites to the proposed Lakefront Steelmaking Plant in Conneaut, OH. This investigation involved four alternative sites submitted by the applicant and additional brownfield and greenfield sites identified for the Corps of Engineers by Fry Consultants, Inc.

6.40
Staff has used the following criteria to determine the viability of an alternative site. The proposed site should . . .

- have sufficient acreage for efficient plant layout. In this study, the applican stated that 1,290 acres of flat, undeveloped land is needed for plant facilities along with additional land for raw materials handling and storage area;

- have an adequate transportation network including deep water port facilities to handle 600 to 1,000-foot lake vessels. Present economies of steelmaking require the use of large quantities of raw materials. Shipping of these materials by lake vessels is cheaper and utilizes less energy than comparable rail and trucking methods;

- have an adequate water supply for plant process units and cooling. The applicant stated that the proposed plant will require a raw water intake of approximately 93.8 million gallons daily;

- be located within an area representing a good labor market;

- be located within economic shipping distance of major raw material resources such as iron ore, coal, and limestone;

- be located within economic shipping distances of the principal markets for flat-rolled steel products;

- be located where sufficient social infrastructure is available or can be expanded without adverse impact on existing communities; and

- be located where adverse impacts on air and water quality would be minimal.

Staff utilized these criteria in considering the overall feasibility of alternative sites based on the interactive effects of social, economic, and environmental factors.

6.41
The following sites were analyzed:

Brownfield Sites:

Chicago, IL
Gary, IN
Lorain, OH
Youngstown, OH
Fairless Hills, PA
Baytown, TX

GREENFIELD SITES:

Ashtabula, OH
Huron, OH
Toledo, OH

BROWNFIELD SITES

6.42
Staff has conducted on-site inspections of brownfield sites within the raw materials and market area of the proposed Lakefront plant. Although the Baytown Texas Works was submitted by the applicant as an alternative site, it was not physically inspected by the staff because of its location outside this market area. However, basic operation research has been done on the Baytown Texas Works and is included herein for reference purposes.

6.43
The evaluation procedures used in the analysis of brownfield sites involved three schemes: (1) the applicant would reconstruct a facility similar to the proposed Lakefront plant upon the brownfield site; (2) the applicant would construct a facility similar to the proposed Lakefront plant adjacent to the brownfield site; or (3) the applicant would purchase a brownfield site and construct a facility similar to the proposed Lakefront plant.

6.44
The closing of a facility for the purpose of reconstructing the proposed Lakefront plant on that site would have the following adverse impacts:

a) The applicant would lose all revenues generated by the present facility for a period of time from which the facility is closed until the new mill goes on line. The applicant also stated that the piecemeal construction of the proposed mill would be infeasible. Present facilities must be demolished before new construction begins.

b) The applicant would lose the product mix capabilities of the existing facilities if that product mix is different from the one at the proposed plant.

c) Furlough of all operations personnel will result during the time period when the existing facilities close until the new plant goes on line, causing massive unemployment and related adverse impacts on nearby communities.

6.45
The closing of existing facilities must overcome additional problems shared by constructing the proposed plant adjacent to sites owned by the applicant and those that are not. These problems are:

a) The purchase of additional land (when necessary). The acquisition of large tracts of land may necessitate closing of streets and highway arteries; closing of municipal service lines

(i.e., water, sewers) and the subsequent cost of replacing them elsewhere; the cost of relocating residents directly involved with the site; and the time involved in acquiring the necessary land. The acquisition of property must be obtained over a period of time to give the purchaser an opportunity to acquire the land discreetly. The reason for this is to prevent prices from escalating disproportionately when land owners discover a major industrial/commercial body such as the United States Steel Corporation is involved. Staff has used a range for $25,000 to $250,000 an acre to estimate the cost of acquiring land. The applicant would face additional costs for site preparation (razing of existing structures, filling, grading, etc.) which would cause additional environmental problems such as the containment of construction runoff, solid waste disposal, etc.

b) The construction and/or expansion of harbor facilities and associated waterways to accommodate large lake vessels (1,000-foot vessels). The extensive dredging and river widening that might be needed may not be environmentally desirable. The cost and time involved may deem the project impractical.

c) The availability or potential to expand social infrastructures such as schools, police and fire protection, sewage handling and treatment, energy supplies, etc.

d) The ability of the surrounding area to accommodate population increases as well as to provide a labor market which possesses the skills required to meet the needs of the proposed plant.

e) The additional degradation of air quality. The feasibility of constructing the proposed plant at any site would first require analysis by the USEPA and appropriate State agencies to define New Source Performance Standards for the various air pollutant parameters involved in new plant sitings using Lowest Achievable Emission Rate (LAER) and Best Available Control Technology (BACT). Additionally, the status of the local area vis a vis primary/secondary National Ambient Air Quality Standards (NAAQS) is critical in determining feasibility of new industrial siting. An "attainment" classification for an area means the air quality is acceptable, meeting NAAQS standards to insure protection of health and property. However, "nonattainment" status for the air quality of an area means that NAAQS standards have been exceeded for one or several air pollution parameters. In order for new industrial growth to occur in a "nonattainment" area, the following criteria must be met:

i) All sources of pollution owned or operated by the same firm in the "nonattainment" area must be in compliance with the existing air pollution control regulations;

ii) the company must reduce pollution from its existing operations or from other operations in the "nonattainment" area to make room for the pollution which will be produced by the new source. This process allows growth while not permitting air quality to deteriorate further; and

iii) the company must use the most effective pollution control technology in its new operations.

f) The additional pollution loads on industrial source waters. The primary water laws and regulations which would apply to new industrial construction are contained in the Clean Water Act. This act is administrated by the USEPA and the U.S. Army Corps of Engineers. USEPA's responsibilities involve establishing effluent limitations for pollutants, enforcement activities, grants for areawide construction of treatment works, and research and training. The discharge of dredged and fill material is regulated under Section 404 of the Clean Water Act through issuance of permits by the U.S. Army Corps of Engineers. Provisions of the Act relevant to new construction projects include those related to new source effluent standards, dredge and fill activities, and enforcement. Provisions in the Clean Water Act establish:

i) Water Quality Standards;

ii) Standards of Performance for New Sources;

iii) Effluent Standards for Toxic Pollutants;

iv) Thermal Discharge Effluent Limitations;

v) Water Quality Certification;

vi) National Pollutant Discharge Elimination System (NPDES), and

vii) Section 404 of the Clean Water Act.

These provisions have been described in Chapter One of this final Environmental Impact Statement.

6.46
The "attainment/nonattainment" air quality criteria are not involved in developing water quality regulations. The water quality standards are regionally uniform and are based on the intended use of the water body. Section 303 of the Clean Water Act specifies that each State shall adopt water quality standards for all intrastate waters and shall submit these standards to the USEPA for approval. The standards

must include the designated use of the navigable waters involved and the water quality criteria based on these uses. The standards shall be sufficient to protect the public health or welfare, enhance the quality of water, and serve the other purposes of the Act. The States must take into consideration the use and value of the waters for public water supplies, propagation of fish, shellfish and wildlife, recreational, agricultural, industrial, and other purposes. At least once every three years public hearings must be held to review the standards and modify as appropriate.

6.47
The intake-discharge system for process waters will be either redesigned or a second system utilized with additional construction to accommodate the increased water volumes required. Environmental problems involved in intake-discharge construction activities include increases in regional water turbidity and water quality degradations due to construction activities and sediment resuspension, as well as adverse construction and operation impacts on local aquatic flora and fauna. Increased demands for process water due to addition of the proposed plant will have adverse effects on aquatic organism entrainment and impingement.

6.48
A brief description of the surrounding communities and plants of each alternative site, along with possible impacts involved if the proposed plant located there, follows.

COMMUNITY DESCRIPTION - CHICAGO, IL

6.49
Chicago, IL, is located on Lake Michigan in Cook County approximately 460 miles west/northwest of Pittsburgh, PA (refer to Figure 6-4). The Chicago Metropolitan area, which encompasses an area of 4,657 square miles, has a population of 7.6 million people.

6.50
Total overall employment was 3,387,000 in the Metropolitan Chicago area, with 173,000 (4.9 percent) unemployed, in 1977. The area's largest employee categories were in wholesale and retail trade (785,000), service and miscellaneous industries (632,000), Government (463,000), and primary metals (128,000). Average annual wages and salaries in Metropolitan Chicago were $13,500 in 1977.

6.51
Chicago's transportation facilities and services are superlative. Ships and barges carry approximately 90 million tons of cargo a year in and out of the Metropolitan Chicago area through the Port of Chicago. The Port of Chicago is served by 14 steamship lines carrying freight to 47 ports in 24 different countries.

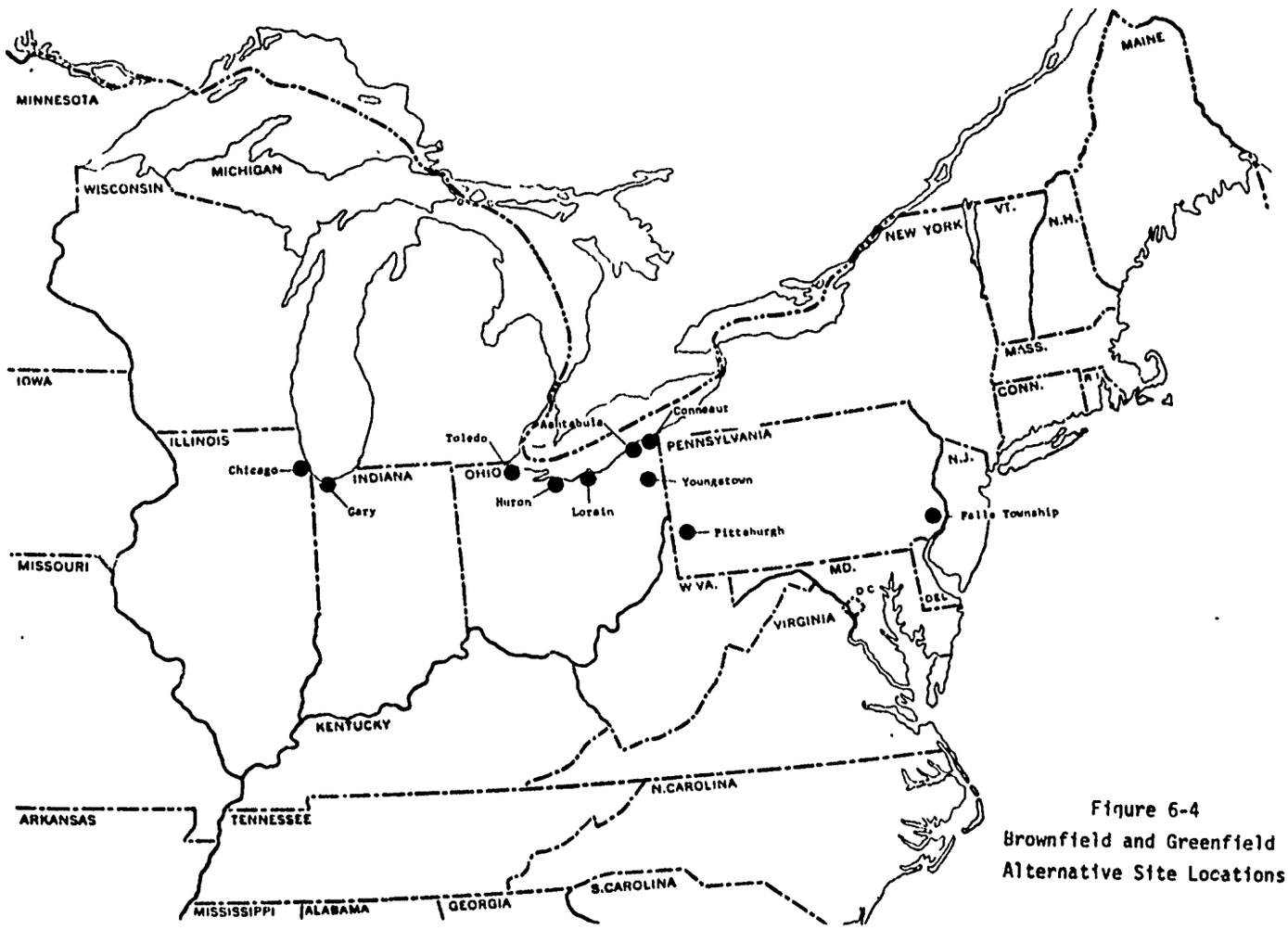


Figure 6-4
Brownfield and Greenfield
Alternative Site Locations

6.52
Illinois possesses an extensive highway system which has more miles in interstate highway than any other State except Texas and California. There are approximately 2,100 trucking companies and warehousing firms in the Metropolitan Chicago area.

6.53
Illinois' rail system has more miles of railroad than any other State except Texas while Chicago's O'Hare Airport, the world's busiest, handles more than 41 million passengers a year.

6.54
The city of Chicago is supplied with electric power by Commonwealth Edison while natural gas is supplied by People's Gas Light and Coke Company. The Metropolitan Sanitary District, which provides potable water, is the world's largest treatment system and a leader in waste and water treatment purification.

6.55
The State of Illinois has a personal income tax of 2-1/2 percent, corporate tax of four percent, and a retail sales tax of five percent.

PLANT DESCRIPTION - SOUTH WORKS

6.56
The South Works (SW) occupies a total area of 585 acres of flat land, all of which are used in production, and is bordered by the Calumet River, Lake Michigan, and residential/commercial areas. SW is congested, being internally crossed by in-plant rail services and interior highways.

6.57
SW was established around 1880 and was initially a steel rail mill. As steel rail demand declined, SW changed its product mix and is presently an integrated steelmaking facility with three blast furnaces, and specialty steel structural, bar, rod, and plate mills. SW serves the steel markets of the Great Lakes States with a capacity of 4.5 million tons of raw steel annually and employs 7,500 to 8,500 people, making it Illinois' largest steel producer.

6.58
Energy needs for these facilities are obtained from the Commonwealth Edison Company (electricity) and the Northern Illinois Gas Company (natural gas). Potable water is obtained from local municipal water systems. Plant process water needs are met by withdrawal of 325 million gallons per day (MGD) from intake structures in Lake Michigan. On-site treatment is provided for industrial wastewater with sanitary wastewater processed by the metropolitan system.

6.59
Raw materials handling capabilities at SW are sufficient for present needs considering the extremely crowded conditions that prevail. The plant has two slips on the Calumet River, each of which are capable of handling medium-sized ore vessels (660-foot) (refer to Table 6-4). Four interstate roadways are accessible to SW (refer to Table 6-5) and rail service is provided by CONRAIL and the Illinois Central (refer to Table 6-6).

6.60
Current information indicates no future major steel manufacturing investments by the applicant for SW. However, recent investments consisted of a 100-ton electric furnace and billet conditioning facilities (1975); water quality control facilities (1976); another rod mill (1976); and a new blast furnace (1979).

EVALUATION - SOUTH WORKS

6.61
Construction of the proposed mill at SW could have the following impacts:

Population Increases

6.62
Staff believes that the Chicago Metropolitan area would be able to supply the labor and skills needed to satisfy the employment requirements of the proposed plant. However, if the proposed plant was located in Conneaut, the applicant believes that an additional 15,800 new residents would be living within the limits of the Principal Study Area.

Infrastructures

6.63
Staff believes that the size of the Chicago Metropolitan area implies that sufficient social (schools, fire and police protection, etc.) and municipal (electricity, natural gas) infrastructures would be available at SW. Expansion of municipal infrastructures would be necessary if the proposed plant was built in Conneaut.

Transportation

6.64
Dock facilities are adequate for SW, however, there is a lake vessel weight limitation of 15,000 tons and a length restriction of 640 feet. The slip depth at SW is 28 feet.

Table 6-4

Selected Plant Water Data

Plant	FACILITY DESCRIPTION: River Lake or Ocean	Dock Facility: Length	Width	Water Depth	Materials Handled: Type	Inbound	Outbound	CAPABILITY: Est. Net Tons	Seasonal Transfer Restrictions	Transfer Combinations	Maximum Vessel Size: Length	Net Tons	Estimated Utilization: Remarks	% Utilization
Fairless Works	River to Ocean	2,000'	350'	40'	Bulk Steel	Yes -	- Yes	6.8/7.2 Million Total	None	Vessel - Plant - Storage - Rail - Truck Dock - Vessel	900'	75,000	38' Draft	75-80%
Lorain - Cuyahoga Works	River to Lake	2,000'	800'	24'	Bulk Only	Yes	None	4.2/4.7 Million Total	Winter Freezing of Lake and Basin Closes Facility	Vessel to Storage Only	650' 800'	20,000 24,000	Dock is Curved and Restricts Unloading by: Huellat. Self-Unloaders are Restricted to Turning Basin.	60-65%
Ohio Works	NO NAVIGABLE WATER FACILITIES													
Gary Works	Lake	5,640'	247'	27'	Bulk Finished Stl. Semi-Finished	Yes Yes Yes	Yes Yes Yes	7.5/8.2 Million Total	Minor Weather Disruptions During Winter Season	Barge or Vessel to Rail, Truck Storage, and Vice Versa	1,000'	55,000	-	70-75%
South Works	Lake	North Slip 2,700' South Slip 1,275'	200' 290' Max. 80' Min.	28' 28'	Bulk Finished Semi-Finished	Yes Yes Yes	Yes Yes Yes	2.8/3.2 Million Total	Minor Weather Disruptions During Winter Season	Barge or Vessel To Rail To Truck To Storage and Vice Versa	640'	13,000	-	65-70%
Texas Works	NOT AVAILABLE													

Source: U.S. Steel Corporation, December, 1978.

Table 6-5

Selected Plant Vehicle Data

Plant	Plant Access Facilities: Description — Gate Name or Number	Description — Inbound and/or Outbound	Description	Estimated Capability — Trucks Number	Estimated Utilization — Trucks Number	Estimated Utilization — %	Supporting Public Facilities: Roadway Serving Plant — Name	No. of Lanes	Nearest Major Highway — Name	Nearest Major Highway — Distance From Gate
Fairless Works	Main Gate	Both	Tyburn - Penna. Ave. Exit	250/350,000	125/175,000	50%	Tyburn - Penna. Ave.	4	U.S. Rt. 13 U.S. Rt. 1	2 Miles 2.5 Miles Industrial Park Local into Residential Area.
	Back Gate	Both	Limited to Employee Cars	-	-	-	Bordentown Road	2	-	Exits Toward Residential Area.
Lorain - Cuyahoga Works	Charleston Street (Product Gate)	Both	Empty Trucks for Loading Misc. Materials In/Out	21/25,000	21/25,000	100%	Charleston Street	4	U.S. Rt. 57	3-4 Blocks to Hwy. 57, then 3.5 Miles to Ohio Turnpike. Travel is on Limited Access Type Road.
	Grove Street	Both	Inbound Loads and Empties Outbound Steel Loads	45/55,000	25/35,000	55-65%	Grove Street	4		
	Pearl (Main) Street	Inbound	Storehouse Materials	70/80,000	45/55,000	65-70%	Pearl Street	4		
	21st Street	Both	Bulk Materials In/Out	85/95,000	85/95,000	100%	21st Street	4		
Ohio Works	Ohio Works						Salt Springs Road	2	Interstate 680	1/2 to 1 Mile Thru Old Residential Neighborhood Although Gates Located at Different Parts of the Plant.
	No. 2 Gate	Inbound	Process Materials to OH and Storeroom Plus any Inbound Raw Materials as Well as Outbound Slag and Sinter.	20/30,000	10/15,000	50%	Division Street	2		
	No. 4 Gate	Both		50/60,000	20/30,000	40-50%				
	McDonald Main Gate	Both	Outbound Steel and Inbound Maint. or Process Materials.	55/65,000	23/35,000	45-55%	Ohio Avenue	2	McDonald Works U.S. Rt. 422 Ohio Rt. 46	To Rt. 422 Approx. 3 Miles on Residential Main Drag. To Rt. 46 Approx. 3 Miles Thru Rural-Residential Area. Both Rts. In Turn Intersect with Interstate 80.
Gary Works	Merchant Mill Gate	Both	All In/Out Materials	70/85,000	45/55,000	65%	Buchanan Street	3	Indiana Toll Road	Merchant Mill - 200 Yards
	Sheet Mill Gate			155/202,000	130/170,000	84%			U.S. Rt. 12-20	Sheet Mill - 1/4 Mile One Mile from Plant En Route to Interstate 94 Approx. 2 Miles Further. Residential-Commercial-Industrial Neighborhood.
	Tennessee Street			40/45,000	20/27,000	50-60%	Tennessee Street	4	3/4 Mile to U.S. Rt. 12/20 to Ind. Toll Road	12/20 and Then 1/2 Mile More.
South Works	86th Street	Both	All In/Out Materials	31/44,000	25/33,000	80%	86th Street	2	Indiana Toll Road	3 Miles Thru Residential-Commercial-Industrial Neighborhood.
Texas Works					NOT AVAILABLE					

Source: U.S. Steel Corporation, December, 1978.

Table 6-6

Selected Plant Railroad Data

Plant	Plant Facilities: Inbound and/or Outbound	Plant Facilities: Estimated Utilization: Cars Per Year	Plant Facilities: Estimated Utilization: %	Plant Facilities: Remarks	Supporting Trunk Line Facilities: Trunk Line	Supporting Trunk Line Facilities: Rail Yard Serving Plant
Fairless Works	Both	28,000-32,000	75-85	Plant Power	CR	Morrisville Yard
Lorain-Cuyahoga Works	Both	57,000-66,000	60-70	Lake Terminal Railroad & Plant Power	N&W	South Lorain Yard
					CR	N&W handles interchange of cars to/from LT via So. Lorain Yd.
					B&O	Lorain Yard
Ohio Works	Both	18,000-21,000	50-60	Youngstown & Northern RR & Plant Power	PLE	Gateway Yard
					B&O	Ohio Junction
					CR	Briar Hill Yard
Gary Works	Both	105,000-120,000	70-80	Elgin, Joliet & Eastern Rwy & Plant Power	EJE	Kirk Yard Basically
South Works	Both	56,000-64,000	70-80	Elgin, Joliet & Eastern Rwy & Plant Power	EJE	Kirk Yard Basically
Texas Works	NOT AVAILABLE					

NOTE: Estimated cars per year are based on inbound and/or outbound steel, coke, coal, ore, stone, semi-finished, revert scrap, and miscellaneous commodities.

SOURCE: U.S. Steel Corporation, December, 1978.

6.65
Due to internal congestion, in-plant rail movement is difficult. Rail facilities serving SW originate from the Kirk Yard adjacent to the Gary Works (Indiana) and must travel to SW along a track network serving other industrial users.

6.66
SW is located approximately three miles from a limited access highway. To reach SW, vehicles must travel through congested residential, commercial, and industrial areas.

6.67
If the proposed plant was located in Conneaut, vehicle movement problems would occur, in addition to the need to improve local roadways.

Employment

6.68
If the proposed plant was constructed upon the SW site, approximately 7,500 to 8,500 operational workers would be laid-off for a period of several years to facilitate construction of the proposed mill. This would cost the local communities $101,250,000 to $114,750,000 a year in plant-related payrolls (average annual earnings per employee was $13,500 in 1977). These employees would be eligible for Federal and State unemployment benefits, causing an additional hardship upon these communities. This impact would not be experienced if the proposed mill is built adjacent to SW or if it is constructed in Conneaut.

Land Acquisition

6.69
The SW site is surrounded by residential, commercial, and industrial areas, Calumet River, and Lake Michigan. The proposed plant would occupy 1,290 acres of land excluding the undetermined amount of additional land needed for raw materials storage and handling. If the proposed plant was built adjacent to SW, cost of acquiring the additional 1,290 acres needed would range from $32,250,000 to $322,500,000. If the proposed plant was constructed upon the SW site, the acquisition costs would be $17,625,000 to $176,250,000 for the 705 acres needed. In addition to the monetary costs, expansion would cause the injurious displacement of people and businesses, possible disruption of desirable community and regional growth, loss of community cohesion, and other adverse social impacts. These impacts would not occur in Conneaut because the applicant owns the undeveloped flat lands needed to construct the proposed mill.

Product Mix

6.70
SW is a producer of specialty steel structural, bar, rod, and plate mills. Construction of the proposed mill over the SW site will eliminate the annual production of 4.9 million tons of these products to be eventually replaced with the production of 4.9 million tons of hot-rolled sheets and coils and 1.52 million tons of steel plate. This impact would not occur if the proposed plant was built adjacent to SW or if it is constructed at Conneaut.

Air Quality

6.71
SW is a nonattainment area for total suspended particulates (TSP) and photochemical oxidants. Any new industrial siting in these areas would first necessitate reduction of these pollutants to attainment standards. Conneaut is a nonattainment area for photochemical oxidants. Offset policies involved in developing attainment limitations would tend to favor the Conneaut site.

Conclusion

6.72
SW is in a good location for steelmaking. It has adequate public infrastructure, transportation capabilities for handling and shipping of raw materials and products, and a skilled labor force. However, due to the possible lay-offs, acquisition of land, and the environmental problems that must be overcome, investments in SW would probably be best suited for modest round-outs.

COMMUNITY DESCRIPTION - GARY, IN

6.73
Gary, IN, is located on Lake Michigan in Lake County approximately 30 miles southeast of Chicago, IL, and 430 miles west/northwest of Pittsburgh, PA (refer to Figure 6-4). The Gary-Hammond-East Chicago Standard Metropolitan Statistical Area (SMSA), which includes Lake and Porter Counties, encompasses an area of 932 square miles and has a total population of 644,000 (1976). The city of Gary has a population of 175,000.

6.74
In September 1978 total employment was 290,700 in the Gary-Hammond-East Chicago SMSA with 17,000 (5.8 percent) unemployed. The majority of the labor force in Lake and Porter Counties were employed in primary metals (71,200), wholesale and retail trade (49,800), service and miscellaneous industries (33,200) and Government (29,300).

Average weekly earnings for manufacturing related jobs in Lake and Porter Counties were $402.17 in August 1978.

6.75
Gary's transportation requirements are met with 57 truck lines utilizing a highway network consisting of Interstate I-65, I-80, I-90, and I-95. Gary is serviced by two major rail lines, CONRAIL and Norfolk and Western.

6.76
Gary is supplied with electric power and natural gas by the Northern Indiana Public Service Company. Potable water is supplied by the municipal water system.

6.77
Gary has a tax on real and personal property assessed at one-third true cash value; an individual adjusted income tax of two percent, and a retail sales tax of four percent.

PLANT DESCRIPTION - GARY WORKS

6.78
The Gary Works (GW) has a total area of 3,441 acres, 2,152 of which are used in plant production, 929 acres are not, and approximately 360 acres were used by the Federal Government as an addition in the adjacent Indiana Dunes National Park. The land not in plant production is covered with large amounts of slag, pieces of ingot molds, beams, rails, equipment awaiting repair or recycling, and storage sheds. GW is bounded to the north by Lake Michigan, to the west by other industrial operations (Youngstown Sheet and Tube/Jones and Laughlin, Inland Steel, USS's South Works, etc.), to the south by a large rail yard facility (Elgin, Joliet and Eastern Railway (EJ&E), a subsidiary of the applicant), and to the east by the national park. The relief of the entire tract of land is generally flat to small hills with a series of small, rolling dunes in the east.

6.79
GW is a fully integrated steelmaking facility consisting of a coke plant, blast furnaces, rail mill, bar mill, tube mill, plate mill, hot and cold strip mills, a forging shop, and galvanizing operations. GW is the applicant's largest steelmaking facility employing 22,500 persons and having a capacity of nine million tons of steel a year.

6.80
Energy needs for these facilities are obtained from the Northern Indiana Public Service Company (electricity and natural gas). Potable water is obtained from local municipal water systems with

plant process water needs being met by intake structures in Lake Michigan withdrawing 800 million gallons per day (MGD). An on-site treatment and recycling system for industrial wastewater is provided with sanitary wastewater processed by the municipal sewage system.

6.81
Raw materials handling capabilities are good with docking facilities capable of handling large ore vessels (1,000-foot) (refer to Table 6-4). Two interstate highways (I-80 and I-90) and State Route 12 run adjacent to GW, however, approaching the plant by road necessitates travel through declining residential areas (refer to Table 6-5). Rail service is provided by EJ&E and the Norfolk and Western Railroads (refer to Table 6-6).

6.82
Recent investments at GW included coke oven batteries and pollution control facilities (1975 and 1976) and electrogalvanizing facilities (1977). Current investment plans include laminar flow cooling on the 84-inch strip mill, additional coke oven gas processing facilities, and rehabilitation of coke batteries.

EVALUATION - GARY WORKS

6.83
As stated earlier, Gary Works (GW) is the applicant's largest integrated steelmaking facility, employing 22,500 persons and producing nine million tons of steel product a year. For this reason, staff has not analyzed the possibilities of the applicant closing GW to construct the proposed plant but instead studied the practicality of locating the proposed plant adjacent to GW. This action could have the following impacts:

Population Increases

6.84
The Gary-Hammond-East Chicago SMSA is capable of supplying the necessary labor and skills needed for the proposed plant and any increase in population due to the proposed facility would have no adverse impact on the area. The applicant stated that locating the proposed facility in Conneaut would cause the addition of 15,800 new residents living within the limits of the Principal Study Area.

Infrastructures

6.85
If the proposed plant was located adjacent to GW, electric power, natural gas, and other municipal infrastructures would be available from the Gary-Hammond-East Chicago SMSA to accommodate additional

demands. In addition, sufficient social infrastructure would also be available. If the proposed plant was built in Conneaut, expansion of existing infrastructures would be necessary.

Transportation

6.86
Highway, rail, and navigable waterway transport systems are well developed at GW. The docking facilities are able to handle 1,000-foot lake ore vessels and the Kirk Yard, a primary receiving rail yard adjacent to GW, provides the plant with immediate service for inbound and outbound rail traffic. Vehicle traffic must traverse through residential/commercial areas to reach the plant from limited access highways. The construction of the proposed plant in Conneaut would create vehicle movement problems and the need to improve local roadways.

Employment

6.87
Direct plant employment opportunities of 8,500 positions would become available if the proposed plant locates at either GW or Conneaut.

Land Acquisition

6.88
GW has approximately 929 acres of land not in current production use. The proposed plant would occupy 1,290 acres of land excluding the undetermined amount of additional land needed for raw materials storage and handling. GW is restricted in its ability to aquire land because it cannot expand to the east due to the Indiana Dunes National Park; the north because of Lake Michigan; the west because of other manufacturers' operations; and to the south because of the developed areas and rail yard facilities. Even if expansion was possible, cost of acquiring the additional 361 acres needed would range from $9,025,000 to $90,250,000. These impacts would not occur in Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed mill.

Product Mix

6.89
Locating the plant adjacent to GW or at Conneaut would increase the applicant's capabilities of producing hot-rolled steel sheets and coils by 4.9 million tons and steel plates by 1.52 million tons a year. Both sites are ideally situated in the market area for these products.

Air Quality

6.90
GW is a nonattainment area for total suspended particulates (TSP), sulfur dioxide (SO_2), and photochemical oxidants. Any new industrial siting in these areas would first necessitate reduction of these pollutants to attainment standards. Conneaut is a nonattainment area for photochemical oxidants. Offset policies involved in developing attainment limitations would tend to favor the Conneaut site.

Water Supply

6.91
Lake Michigan provides GW with its process water needs, however, since the Gary, IN, area is heavily industrialized, the effects of new water source demands on local aquatic systems would have to be assessed. Staff believes that these effects may be less if the proposed plant was built at Conneaut.

Water Quality

6.92
Although the mixing/assimilation capacities of Lakes Erie and Michigan are large, staff believes that additional effluent loadings by the proposed plant would have a larger adverse impact in the heavily industrialized Gary, IN, area than it would in Conneaut.

Conclusion

6.93
GW is in a good location for steelmaking, having adequate public infrastructure, transportation capabilities for handling and shipping of raw materials and product, and access to a skilled labor force. However, due to economic (difficulty in acquiring more land) and environmental (air and water quality) problems, investments in GW would probably be limited to incremental round-outs.

COMMUNITY DESCRIPTION - LORAIN, OHIO

6.94
Lorain, OH, is located on Lake Erie in Lorain County approximately 29 miles west of Cleveland, OH, and 127 miles northwest of Pittsburgh, PA (refer to Figure 6-4). The population of Lorain County is approximately 288,735 people (1979 estimates). The city of Lorain, which encompasses an area of 24 square miles, has a population of 86,485 people.

6.95
The total labor force in Lorain County in October 1977, was 127,790 with an unemployment rate of five percent. The majority of this labor force was employed in manufacturing (39,881), wholesale and retail trade (16,441), service jobs (12,512), and Government (8,492). Average annual income was $14,556 in 1976.

6.96
The Lorain area is serviced by the Norfolk and Western Railroad, Chessie Railroad, and Conrail. Major highway accesses are the Interstate I-80 and I-90, U.S. Route 6, and State Routes 2, 57, 58, 254, and 611.

6.97
Electrical power is supplied to Lorain by Ohio Edison, natural gas by Columbia Gas of Ohio, and potable water by the municipal water authority.

6.98
The city of Lorain has a city income tax of one percent on gross salary and one percent on net profits; a State personal income tax of one and one-half to three and one-half percent according to income; a variable corporate franchise tax; and a retail sales tax of four percent.

PLANT DESCRIPTION - LORAIN-CUYAHOGA WORKS

6.99
The Lorain-Cuyahoga Works (LCW) encompasses an area of 2,176 acres, 1,737 of which are used in plant production and the remaining 439 acres used to store raw materials, slag, scrap steel, beams, finished product, and various items of equipment. LCW is bordered by residential/commercial areas with the Black River flowing through the property, separating the tract.

6.100
LCW is a fully integrated steel mill with five blast furnaces, coke making facilities, bar mills, and pipe mills. In addition, the applicant's only burnt lime plant is located at LCW and produces burnt lime for themselves and other USS plants. LCW has an annual capacity of 3.5 million tons of steel and employs approximately 7,000 to 8,000 persons.

6.101
Energy needs for LCW are obtained from the Ohio Edison Company (electricity) and Columbia Gas of Ohio (natural gas). Plant process water needs are met by withdrawal of 170,000,000 gallons per day (MGD) from intake structures in the Black River. On-site treatment

is provided for industrial wastewater with sanitary wastewater processed by the metropolitan system.

6.102
Raw materials handling at LCW is quite good with docking facilities capable of handling medium-size lake vessels (refer to Table 6-4). However, vessels must navigation 2.7 miles of the Black River to reach the dock facilities at LCW. In order to accommodate these vessels, the Black River must be dredged periodically from Lake Erie to the turnaround area near the docks. Two interstate highways (I-80 and I-90) and State Routes 2 and 6 are adjacent to LCW (refer to Table 6-3) with rail service provided by Conrail and the Norfolk and Western Railroads (refer to Table 6-6).

6.103
LCW has been the object of investments by the applicant, for example, LCW had a coke battery rehabilitated in 1978, and work is currently being done on its blast furnaces and additional pollution control equipment.

EVALUATION - LORAIN-CUYAHOGA WORKS

6.104
Construction of the proposed mill at LCW could have the following impacts:

Population Increases

6.105
Staff believes that the Lorain-Elyria, OH, SMSA could supply the necessary labor and skills needed for the proposed plant and any increase in population due to the proposed facility would have no adverse impact on the area. The applicant stated that locating the proposed facility in Conneaut would cause the addition of 15,800 new residents living within the limits of Principal Study Area.

Infrastructures

6.106
Staff believes that the size of the Lorain-Elyria SMSA implies that sufficient social (i.e., recreation, housing, etc.) and municipal (energy requirements, sewage treatment) infrastructure would be available at LCW. If the proposed plant was built in Conneaut expansion of existing infrastructure would be necessary.

Transportation

6.107
Highway and rail transportation networks are good at LCW, however, docking facilities are inadequate for 1,000-foot lake ore vessels.

6.108
The accommodation of 1,000-foot lake ore vessels would necessitate the dredging of 2.7 miles of the Black River to allow for the deeper vessel drafts needed. Also, the Black River would have to be widened to allow passage of these vessels. Environmentally, these actions may be undesirable, however, if they were feasible, the permit process would extend the project for an additional period of months and the actions themselves (river and lake channel dredging, river widening) could take years to complete.

Employment

6.109
If the proposed plant was constructed upon the LCW site, approximately 7,000 to 8,000 operational workers would be laid-off for a period of several years to facilitate construction of the proposed mill. This would cost the local communities $101,892,000 to $116,448,000 a year in plant-related payrolls (average annual earnings per employee was $14,556 in 1976). These employees would be eligible for Federal and State unemployment benefits, causing an additional hardship upon these communities. This impact would not be experienced if the proposed mill is built adjacent to LCW or if it is constructed in Conneaut.

Land Acquisition

6.110
The LCW site is surrounded by residential/commercial areas and is bisected by the Black River. The proposed plant would occupy 1,290 acres of land excluding the undetermined amount of additional land needed for raw materials storage and handling. If the proposed plant was built adjacent to LCW cost of acquiring the additional 851 acres needed would range from $21,275,000 to $212,750,000. If the proposed plant was constructed upon the LCW site, no additional land would have to be purchased. In addition to the monetary costs, expansion would cause the injurious displacement of people and businesses, possible disruption of desirable community and regional growth, loss of community cohesion, and other adverse social impacts. These impacts would not occur in Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed mill.

Product Mix

6.111
LCW produces seamless pipe and hot-rolled bars requiring varying degrees of finishing. Altering the character of LCW's production to match the proposed plant's would conceivably mean the applicant would lose these capabilities completely. This would not occur if the plant was built adjacent to LCW or in Conneaut.

Air Quality

6.112
LCW is a nonattainment area for sulfur dioxide (SO_2) and photochemical oxidants and is adjacent to an area which is a nonattainment area for total suspended particulates (TSP). Any new industrial siting in these areas would first necessitate reduction of these pollutants to attainment levels. Conneaut is a nonattainment area for photochemical oxidants. Costs of developing offset policies for LCW would be much higher than in Conneaut.

Water Quality

6.113
Staff assumes that if the proposed plant was located on or adjacent to LCW, the water quality of the Black River would be more adversely impacted than the proposed plant would have on Lake Erie if it was located in Conneaut. This is due in part to the greater mixing capacity of Lake Erie.

Conclusion

6.114
LCW is in a favorable location for a steelmaking operation, well situated with respect to the principal sources of raw materials and excellent access to the steel market area. The plant currently manufactures products that will be experiencing demand increases in the future.

6.115
Staff believes that LCW is suitable for future development but not to the extent of the proposed facility. The advantages of a good labor force and adequate public infrastructure are overshadowed by the economic (possible layoffs, land acquisitions, loss of product mix) and environmental (dredging of Black River, air and water quality) problems involved.

COMMUNITY DESCRIPTION - YOUNGSTOWN, OH

6.116
Youngstown, OH, is located in Mahoning County within the Mahoning River Valley approximately 66 miles southeast of Cleveland, OH, and 55 miles northwest of Pittsburgh, PA (refer to Figure 6-4).

6.117
The Youngstown-Warren SMSA, which includes Mahoning and Trumball Counties, has a total population of 536,836 (1970). Total population of the city of Youngstown, which encompasses an area of 35 square miles, was 140,880 (1974).

6.118
In October 1978, total overall employment was 228,400 in the Youngstown-Warren SMSA with 14,100 (5.8 percent) unemployed. Manufacturing-related employment showed a higher concentration of jobs in the production of durable goods (74,800), primary metals (37,400), and blast furnace and basic steel products (22,400). Non-manufacturing related jobs showed a greater concentration of employment in retail trade (58,300), service and miscellaneous industries (35,600), and Government (25,900). Average weekly earnings of factory production workers in Mahoning and Trumball Counties rose to $367.53 in October 1978.

6.119
Due to recent plant closings in the Youngstown-Warren SMSA, some municipal service infrastructure is available that could accommodate future industrial development. Improved highway and freeway systems traverse the area in all directions placing Youngstown in close proximity to business and industrial centers. The Ohio Turnpike has three interchanges serving Youngstown.

6.120
Youngstown is serviced by two major rail lines, Conrail and the Chessie Rail System, as well as the Pittsburgh and Lake Erie, Youngstown and Southern, Lake Erie and Eastern, and the Youngstown and Northern Railroads. In addition, Youngstown has developed trucking facilities.

6.121
The city of Youngstown is supplied with electric power by the Ohio Edison Power Company while natural gas is furnished by the East Ohio Gas Company.

6.122
The city of Youngstown has a property tax at a rate of $48 per $1,000 of assessed value; a one and one-half percent wage tax on all

earnings; and a five percent tax on intangible personal property. The State of Ohio has an income tax that ranges from one and one-half percent to three and one-half percent according to income; a variable corporate franchise tax; and a retail sales tax of four percent.

PLANT DESCRIPTION - OHIO STEEL WORKS

6.123
The Ohio Steel Works consist of two major divisions, the Youngstown Works (YW) and the McDonald Works (MW). YW has a total area of 487 acres, 265 of which are used in plant production and 222 acres not in production. MW, which is located seven miles north of YW, has 379 acres of which 251 are in production and 128 not in production. Both operations are bordered by the Mahoning River and residential/ commercial areas. These facilities are congested, being internally crossed by in-plant rail services and interior roadways. Land not in production is scattered with various pieces of equipment and large slag dumps.

6.124
YW was established at the turn of this century and by 1916 had 15 open health furnaces operating. Presently, YW is an integrated steelmaking plant with three blast furnaces, 15 open hearths, and primary rolling mills. Construction of MW began in 1916 with the first steel rolled in 1918 on its bar mill. Presently, this facility can roll a variety of bars, plates, strip, bar shapes, and special sections for consumer products.

6.125
Basically, YW produces steel and MW finishes the steel produced by YW. Current capacity of YW is less than 1,000,000 tons per year. Hot molten steel is transported from YW to MW via torpedo cars traversing seven miles of rail. MW uses this steel to produce automobile bumpers and wheels, window sashes, razor blades, and agricultural equipment for the Great Lakes region.

6.126
Combined employment of the two facilities is approximately 3,600 -- roughly 1,800 at each plant. Employment has been on the decline at the Ohio Steel Works. A survey conducted in the mid-1970's concluded that at least 10 percent of Ohio Steel Works employees had 40 years or more of service. This workforce is well-established because personnel hired retain their jobs and the turnover rate of employees is low.

6.127
Energy needs for these facilities are obtained from Ohio Edison Company (electricity) and the East Ohio Gas Company (natural gas).

6.128
Plant process water needs are met by withdrawal of 61,000,000 gallons per day (MGD) at YW and 31 MGD at MW from intake structures in the Mahoning River. On-site treatment is provided for industrial wastewater with sanitary wastewater processed by the metropolitan system. Potable water is obtained from local municipal water systems.

6.129
Limestone and coal sources from Pennsylvania are delivered to the Ohio Steel Works by rail whereas pellets and ore are shipped first to the P&C Dock Company in Conneaut, OH, and delivered to Youngstown by train.

6.130
YW and MW depend on rail and trucking facilities to provide transportation for raw materials and finished products as neither of them have harbor facilities (refer to Table 6-4). Both plants are serviced by Conrail, providing rail transportation to support current operations (refer to Table 6-5). YW is approximately one mile from Interstate 680 while MW is approximately three miles from US Route 422 and Ohio Route 46 (refer to Table 6-6).

6.131
Available information indicates no future major steel manufacturing investments involving upgrading of facilities or purchasing of new equipment by the applicant for the Ohio Steel Works. Recent investments have been related to environmental controls to meet compliance mandates.

EVALUATION - OHIO STEEL WORKS

6.132
The construction of the proposed plant at the Ohio Steel Works could necessitate closing either the YW, MW, or both. If the plant was built adjacent to YW or MW, both could continue to operate. However, the proposed facility, if it was constructed at the YW site, would force MW to obtain their raw steel elsewhere or shut down until the new facility could supply them with their raw steel requirements. In addition, if the proposed facility was constructed at the MW site, YW would have to ship their raw steel to other finishing mills or shut down until the new facility could absorb their output.

6.133
Staff believes that if the proposed plant was constructed at either the YW or MW site, the applicant would close both facilities because of their dependency upon each other. Shipping of YW's raw steel, or

having MW obtain their steel needs elsewhere, would place an unreasonable cost upon the applicant, thus making operations of the surviving mill unprofitable until the new facility goes on line. If the applicant decided to keep the remaining mill open, environmental, and safety problems involved in the transportation of hot molten steel (i.e., emissions from torpedo cars or the possibility of train derailments) would increase over the greater traveling distances required.

6.134
Staff, in evaluating the impacts of the proposed mill locating at the Ohio Steel Works, assumed that the plant would be built adjacent to either YW or MW or, if the plant was constructed at one of these sites, the applicant would shut down complete operations until the proposed plant begins production. Nevertheless, construction of the proposed mill at the Ohio Steel Works would have the following impacts:

Population Increases

6.135
No significant increase in population would occur in the Youngstown-Warren SMSA. Staff believes the area would be able to supply the labor and skills needed to satisfy the employment requirements of the proposed facility due to recent plant closings. If the proposed plant was located in Conneaut, additional manpower would be required. The applicant believes that this would cause the addition of 15,800 new residents living within the limits of the Principal Study Area.

Infrastructures

6.136
Staff believes that sufficient social (schools, hospitals, etc.) and municipal (electric, sewage treatment) infrastructure would be available in the Youngstown area due to recent plant closings. Expansion of existing infrastructures would be necessary if the proposed plant was built in Conneaut.

Transportation

6.137
Harbor facilities are not available at the Ohio Steel Works since both sites are landlocked with no navigable waterways. Raw materials are obtained from the docking facilities of the P & C Dock Company of Conneaut, OH, where they are transferred from lake vessels to rail cars and then sent to Youngstown. This process is time consuming and involves extra transfer and handling costs associated with the movement of materials over 60 miles of rail between the Ohio Steel Works

and Conneaut, OH, including the irretrievable loss of valuable energy resources such as diesel fuel, gasoline, etc. Although the P & C Dock Company can be equipped to handle the raw materials needed for the proposed plant, the additional transportation costs would not occur if the facility was located in Conneaut.

6.138
The Youngstown site is heavily dependent upon trucking because of its limited rail network and lack of waterway transportation. YW has two plant gates for vehicle transportation, both of which are located approximately one mile from a limited access highway. MW has one plant gate for all shipments and has a distance of three miles between the plant gate and limited access highway which necessitates traveling through residential and commercial areas, school zones, and crossing bridges that have severe weight limitations.

6.139
The poor condition of Youngstown's bridges was recently documented in the Youngstown Vindicator (7 January 1979). This article summarized the current status of these bridges and presented rehabilitation cost estimates. The repair/replacement costs for updating these bridges reflect the extreme state of disrepair, costing approximately $41,000,000 for 15 bridges surveyed. Weight limitations of these bridges were as follows: five with eight tons or less; one with 15 tons; two with 20 tons; two with 30 tons; and one with 40 tons. To obtain Federal funds that would supply 80 percent of the repair/replacement costs, these bridges must be designed to withstand individual loads in excess of 40 tons. In closing, the article stated that two-thirds of the 327 bridges in Mahoning County are in need of repair or should be replaced. The additional costs of bridge repairs such as that found in Youngstown would not be a major factor in road improvement costs if the plant would locate in Conneaut, however, the applicant feels that vehicle movement problems would occur and the upgrading of local roadways would be needed.

Employment

6.140
If the proposed plant was constructed at YW or MW, approximately 3,600 operational workers would be laid-off for a period of several years to facilitate construction of the proposed mill. This would cost the local communities $68,800,000 a year in plant-related payrolls (average annual earnings per employee was $19,111 in October 1978). These employees would be eligible for Federal and State unemployment benefits, causing an additional hardship upon these communities. This impact would not be experienced if the proposed mill is built adjacent to YW or MW, or it is built in Conneaut.

6.141
The Ohio Steel Works is located within the Mahoning River Valley. The relief of this area restricts practical industrial expansion due to the meandering course of the Mahoning River and the extensive excavation which would be needed to develop reasonably level sites to facilitate plant construction. Other restrictions to industrial expansion in this area are the commercial and residential areas surrounding the Ohio Steel Works.

6.142
The proposed plant would occupy 1,290 acres of land excluding the undetermined amount of additional land needed for raw materials storage and handling. As described earlier, YW has 222 and MW 128 acres of land not in current production use. If the proposed plant was built adjacent to YW, cost of acquiring the additional 1,068 acres needed would range from $26,700,000 to $267,000,000; while the cost of acquiring the 1,162 acres needed to construct the plant adjacent to MW would range from $29,050,000 to $290,500,000. If the proposed plant was constructed upon either the YW (487 acres) or MW (379 acres) sites, the acquisition costs would be $20,075,000 to 200,750,000 for the 803 acres needed at YW or $22,775,000 to $227,750,000 for the necessary 911 acres at MW. In addition to the monetary costs, expansion would cause the injurious displacement of people and businesses, possible disruption of desirable community and regional growth, loss of community cohesion, and other adverse social impacts. These impacts would not occur in Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed mill.

Product Mix

6.143
The Ohio Steel Works is a producer/finisher of special steel orders such as automobile bumpers and wheels, window sashes, razor blades, and agricultural equipment. The applicant would not lose the capabilities of producing these products if the proposed plant was constructed in Conneaut. These products use small tonnage and consequently large plants could not perform these tasks profitably because they would not utilize the full capacity of their equipment or facilities.

Air Quality

6.144
Mahoning County is a nonattainment area for total suspended particulates (TSP), sulfur dioxide (SO_2), carbon monoxide (CO), and photochemical oxidants. Conneaut is a nonattainment area for photochemical oxidants. New industrial siting in these areas would

first necessitate reduction of these pollutants to attain standards. Staff believes that the costs involved in developing offset policies to achieve attainment limitations for TSP, SO_2, CO, and photochemical oxidants in Youngstown would be much higher than those costs associated in developing offset policies to achieve attainment criteria for photochemical oxidants in Conneaut.

Water Supply

6.145
Low flow conditions in the Mahoning River during summer periods have been inadequate to supply industrial water needs in Youngstown despite a flood control reservoir system in the upper Mahoning River Valley. A possible alternative to alleviate this shortage would involve construction of a water pipeline from the nearest upstream reservoir (Meander Creek Reservoir) to the Mahoning River in Youngstown. However, material and construction costs, along with disruption of forests, wetlands, residential areas, and farms would make this project impractical.

Water Quality

6.146
Historically, new discharge sources in the Mahoning River were problematic because the river had exceeded environmentally acceptable criteria for water quality. Additional effluent and thermal discharges from the proposed plant into this river could adversely impact its local water quality and aquatic biota. These discharges could be severe enough to:

i) cause existing effluent concentrations in the Mahoning River to exceed USEPA guidelines; and

ii) adversely affect stressed aquatic flora and fauna communities. The assimilation capacity of the Mahoning River is limited due to its seasonal low flow conditions and existing industrial use demands. Contaminants remaining in the effluent stream after treatment would be discharged in concentrations higher than ambient. If the proposed plant was constructed in Conneaut, the greater mixing capacity of Lake Erie would lessen these impacts.

Conclusion

6.147
The future of the Ohio Steel Works will be determined by several factors: the general economy of the steel industry; the costs involved with rail and truck freight movement; and the applicant's willingness to invest the money needed to modernize their plant and

equipment. Staff believes that Youngstown is not suitable for large-scale development similar to that proposed for Conneaut but would be better adapted for modest round-outs to maintain profitable operations. The advantages of a good labor force and adequate public infrastructure in Youngstown are overshadowed by the adverse social, economic, and environmental impacts stated above.

COMMUNITY DESCRIPTION - FALLS TOWNSHIP, PENNSYLVANIA

6.148
Falls Township, PA, is located along the Delaware River in Bucks County approximately 30 miles north of Philadelphia, PA, and 320 miles east of Pittsburgh, PA (refer to Figure 6-4). Falls Township, which encompasses 27 square miles and the Fairless Hills Works, has a population of 56,000 people. Buck County population is approximately 400,000.

6.149
Total employment of Falls Township in 1976 was 17,007 people, with the majority of them employed in manufacturing (12,205), wholesale and retail trade (2,285), and Government (1,058).

6.150
Falls Township has direct access to U.S. Route 1 and Interstate 95 with rail service provided by the Reading Railroad and Conrail.

6.151
Philadelphia Electric Company supplies the electrical power and natural gas needs of the area.

6.152
Currently, residents of Falls Township face a personal income tax of 2.2 percent, property tax rate of two percent on assessed value, and a retail sales tax of six percent.

PLANT DESCRIPTION - FAIRLESS HILLS WORKS

6.153
The Fairless Hills Works (FW) occupies 1,650 acres of land with an additional 1,253 acres adjacent to the plant. The relief of this area is flat to low elevation hills. Prior to construction, the general elevation of the site averaged 11 feet above sea level. In order to obtain proper drainage, buildings, roads, and yards were placed at an elevation of 20.5 feet by removing earth from one area and placing it in another. The remaining pits filled with water and created ponds throughout the plant site. Presently, these pits are being filled with residue from plant operations and create more useable space within the site. All reclaimable products are removed

from the residue allowing the remaining product to be used as backfill.

6.154
FW's operations, from steelmaking to the various stages of product refinement, are in sequential order, facilitating efficient and orderly flow of goods and materials, in addition to the proper utilization of personnel and ancillary services needed for production and shipment.

6.155
Steelmaking production began at FW in December 1952, with an annual capacity of approximately 1,000,000 tons of raw steel. Today, FW is a fully integrated steel mill, consisting of coke plants, bar mills, hot and cold-rolled strip with finish coating mills, skelp mills, pipe mills, and a wire and rope department. Current capacity is 4.8 million tons of raw steel annually. Employment at FW is approximatly 7,000 to 8,000 people.

6.156
Energy needs for FW are obtained from the Philadelphia Electric Company for both electricity and natural gas. Plant process water needs are met by withdrawal of 288,000,000 gallons per day (MGD) from intake structures in the Delaware River. The plant has its own water treatment facilities for potable and process water and has an extensive on-site treatment and recycling system.

6.157
Limestone for FW is received from local suppliers while the primary sources of iron ore are in Canada and South America, using the vessel receiving facilities at the plant. Coal is also imported from these countries with some coal delivered by rail from West Virginia and Pennsylvania.

6.158
Vessel handling capabilities at FW are adequate for present use (refer to Table 6-1). The dock facility is 2,000 feet long and 350 feet wide, with a slip depth of 40 feet. In addition, the Delaware River has sufficient depth to allow ocean vessels access to the plant.

6.159
The present plant gates are adequate to handle peak traffic loads (refer to Table 6-2). Adjacent roadways have been planned in a manner to allow traffic to flow at a safe and orderly pace as it is dispersed onto other highways. Plant gates have truck lots where trucks can await processing without disrupting other vehicular movement.

6.160
Rail service is provided by Corrail with main lines adjacent to the site, also facilitating the shipping or receiving of goods and raw materials (refer to Table 6-3). Adequate rail facilities exist in-plant to allow the ready movement of raw materials and finished product in and out of operations areas.

6.161
FW is well situated for a steelmaking facility with access to raw material sources and an excellent transportation network. Products made at FW are shipped to the Middle Atlantic States and throughout New England.

EVALUATION - FAIRLESS HILLS WORKS

6.162
As stated earlier, the operations located at FW, from steelmaking to the various stages of product refinement, are laid out in sequential order. This allows the full utilization of the personnel and equipment needed for production and shipment of steel. For this reason, staff has not analyzed the possibilities of the applicant closing FW to construct the proposed plant but instead studied the practicality of locating the proposed plant adjacent to FW. This action could have the following impacts:

Population Increases

6.163
Staff believes that the Lower Bucks County, PA, region, which is included in the Philadelphia SMSA could supply the necessary labor and skills needed for the proposed plant and any increase in population due to the proposed facility would have no adverse impact on the area. The applicant stated that locating the proposed facility in Conneaut would cause the addition of 15,800 new residents living within the limits of the Principal Study Area.

Infrastructures

6.164
Staff believes that the size of the Philadelphia SMSA implies that sufficient social (i.e., hospitals, fire and police protection, etc.) and municipal (sewage treatment, electricity) infrastructure would be available at FW. If the proposed plant was built in Conneaut, expansion of existing infrastructures would be necessary.

Transportation

6.165
Highway, rail, and navigable waterway transport systems are well-developed at FW. Staff believes that construction of the proposed plant adjacent to FW would interrupt normal operations and expansion of existing transportation facilities would be necessary to maintain current status quo. The construction of the proposed plant in Conneaut would have no effect on FW's operations, however, Conneaut would experience vehicle movement problems and the need to improve local roadways.

Employment

6.166
Direct plant employment opportunities of 8,500 positions would be available if the proposed plant locates at either FW or Conneaut.

Land Acquisition

6.167
The proposed plant would occupy 1,290 acres of land, excluding the undetermined amount of additional land needed for raw materials handling and storage. If the proposed plant was built adjacent to FW, cost of acquiring the additional 37 acres of land needed would range from $925,000 to $9,250,000.

6.168
FW is somewhat confined with regards to new property acquisition due to the residential, commercial, and industrial development which encroach on the plant site in addition to the Delaware River which forms a natural boundary around part of the area. Expansion would cause the injurious displacement of some industrial firms, an impact that would not occur at Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed facility.

Product Mix

6.169
The major products of the proposed plant will be hot-rolled steel sheets and coils, and steel plates. FW is located on the eastern boundary of this market, 70 percent to 80 percent of which is concentrated in the northern part of the midwestern section of the United States. Shipping hot-rolled steel sheets and coils, either directly to customers or to the applicant's other plants in the midwest for further processing, would increase costs considerably. In addition, FW maintains a portion of the steel plate market in the

eastern part of the United States which already exhibits excess capacity. If the proposed plant was located in Conneaut, the additional shipping costs would not occur.

Air Quality

6.170
Bucks County, PA, and Conneaut, OH, are nonattainment areas for photochemical oxidants. Offset policies to achieve attainment limitations for photochemical oxidants must be met before the proposed plant can be located at either site.

Water Quality

6.171
If the proposed plant was located adjacent to FW, water treatment facilities would have to be expanded to accommodate it. However, staff believes that water quality impacts in Conneaut would be less than the impacts the additional facility at FW would have on the Delaware River, due to the greater mixing capacity of Lake Erie.

Conclusion

6.172
Staff believes that FW is suitable for future development but not to the extent of the proposed facility. The advantages of adequate social infrastructure at FW is overshadowed by the adverse economic and environmental impacts stated above.

COMMUNITY DESCRIPTION - BAYTOWN, TEXAS

6.173
Baytown, TX, is located on the Galveston Bay in Harris County, approximately 20 miles east of Houston, TX, and 1,350 miles southwest of Pittsburgh, PA. The population of Baytown is 56,000.

6.174
Total overall employment in Baytown was 17,398, with 545 unemployed (3.0 percent) in 1970. Major employment groups in Baytown were manufacturing (5,028), wholesale and retail trade (3,427), construction (2,052), and Government (1,949). Average annual income was $13,886 in 1975.

6.175
The Baytown area is served by major rail lines and is accessible via Interstate I-10 and State Routes 225 and 146.

6.176
Electrical power is supplied by the Houston Light and Power Company while natural gas is supplied by the Emtex Corporation for the Baytown region.

6.177
Baytown has a property tax of $1.44 per $100 of assessed value (assessed at 50 percent), no income or corporate tax, and a retail sales tax of five percent.

PLANT DESCRIPTION - TEXAS WORKS

6.178
The Texas Works (TW) has a total area of 13,852 acres, 2,046 of which are used in plant production while the remaining 11,806 acres of flatland are in partial use by other industries.

6.179
The first heat of steel was tapped at TW in 1971, utilizing two electric steelmaking furnaces, a slab caster, and a plate mill. Recently, two more electric furnaces and slab casters were added, doubling the steelmaking capabilities of TW. The applicant also installed degassing and desulfurization processing equipment to produce ultra-low sulfur steels which are used for Arctic climatic use.

6.180
The primary product of TW is steel plates. TW also has the capabilities to produce 600,000 tons of pipe annually in various sizes and grades. Steel plate used for the pipe mill is produced on the adjacent 160-inch plate mill, providing direct transfer of steel from one mill to the other.

6.181
The workforce at TW is young, it has been reported that approximately 51 percent of the plant's employees are 25 years of age or younger, and about 21 percent are women. A few of the employees came from the applicant's American Bridge Division pipemaking facility at Orange, TX, which closed in February 1977.

6.182
Energy needs for TW are obtained from the Houston Light and Power Company (electricity) and the Entex Corporation (natural gas).

6.183
TW has an excellent transportation network. Interstate 10 provides an east-west route and passes north of TW. In addition, railroads such as the Southern Pacific, Missouri-Pacific, Atchison, Topeka, and Santa Fe, and others service the plant facilities. TW also has

access to deepwater shipping facilities which utilizes the Galveston Bay/Gulf of Mexico waterways.

EVALUATION - TEXAS WORKS

6.184
The construction of the proposed mill adjacent to the present facilities at Texas Works (TW) could have the following impacts:

Population Increases

6.185
Staff believes that the Houston, TX SMSA, in which Baytown is a part of, could supply the necessary labor and skills needed for the proposed plant and any increase in population due to the proposed facility would have no adverse impact on the area. The applicant stated that siting the proposed plant at Conneaut would add 15,800 new residents to the Principal Study Area.

Infrastructures

6.186
Staff believes that the size of the Houston SMSA implies that sufficient social (i.e., schools, hospitals, etc.), and municipal (electric, natural gas) infrastructure would be available in the Baytown area. If the proposed plant was built in Conneaut, expansion of existing infrastructures would be necessary.

Transportation

6.187
Highway, rail, and navigable waterway transport systems are well developed in the Baytown area. Staff believes that there would be no adverse impacts if the proposed plant would locate here. The construction of the proposed mill in Conneaut would create vehicle movement problems and the need to improve local roadways.

Employment

6.188
Direct plant employment opportunities of 8,500 positions would be available if the proposed plant locates in either Baytown or Conneaut.

Land Acquisition

6.189
The applicant owns sufficient land to develop the proposed facility at TW or Conneaut.

Product Mix

6.190
TW produces plate steel and pipe for markets located throughout southeast United States. Although this plant is well situated in regards to the plate/pipe market area it is not in a good location for the products that would be manufactured at the proposed plant (steel sheets and coil). The market area for 70-80 percent of the steel sheets and coil consists of the Great Lakes Basin and the north central regions of the United States. If the proposed plant was built at TW, it would necessitate the annual shipping of approximately 4.9 million tons of steel sheets over substantial distances to other facilities owned by the applicant and their customers along the Great Lakes. The additional transportation and handling costs, along with the increased consumption of valuable energy resources such as diesel fuel, gasoline, etc., would not occur if the proposed plant was located in Conneaut.

Conclusion

6.191
The applicant has stated that additional steelmaking capacity should be directed toward the manufacturing of hot-rolled steel sheet and steel plate products. Locating the proposed mill at TW would necessitate the annual shipping of 4.9 million tons of hot-rolled steel sheets and coils over large distances, placing an additional cost per ton of product. Staff believes that locating the proposed plant at TW or Conneaut is feasible, however, the additional shipping costs involved in locating it at TW would place the applicant in a noncompetitive position in the hot-rolled steel sheets market. For this reason, staff believes that the use of TW site would be impractical.

CONCLUSION - BROWNFIELD SITES

6.192
Potential brownfield sites not in current use by their owners were identified using industry directories of plant sites and available data on plant closings. Facilities that have been vacated or are currently experiencing extensive underutilization are likely to be sites that do not lend themselves as favorable locations for that particular operation. These sites tend to be landlocked, possess limited acreage, and do not have large tracts of land available adjacent to them for expansion. Examples of this are the Alan Wood Steel Company in Conshohocken, PA, (approximately 800 acres) and the Bethlehem Steel Corporation facilities in Pottstown, PA, (approximately 100 acres). These sites were not investigated futher due to their size. Using the resources available, staff was not able

to locate a brownfield site within the market area of the proposed facility that would be suitable for the applicant's needs.

6.193
Staff has made onsite investigations of the applicant's South Works, Gary Works, Lorain-Cuyahoga Works, Ohio Works, and Fairless Hills Works. These plants are operating efficiently with good utilization of current acreage and ancillary facilities. Staff feels that none of these facilities have the ability for expansion of an additional 6.4 million tons of annual capacity. However, for any one of them to do so, they would face a variety of different problems.

6.194
Incremental expansions at these plants could add to the applicant's total steelmaking capacity. However, to achieve the proposed 6.4 million tons of annual capacity using incremental expansion at these plants may be difficult. The applicant would experience diseconomies of production if the steelmaking facilities are located great distances from the finishing mills. Staff believes that it would be impractical to ask the applicant to increase production output at Gary Works, ship that output via truck or rail approximately 400 miles to Ohio Works where it would be further processed, and then ship it approximately 280 miles to customers in Detroit, MI, via truck or rail through Conneaut (or Ashtabula) and then by vessel to Detroit. This would involve increased handling and transportation costs that would either be absorbed by the applicant or passed on to its customers, pricing the product out of the competitive market. In addition to monetary costs, the irretrievable loss of valuable energy resources (i.e., diesel, fuel, gasoline, etc.) would occur because of the extra transportation and handling needs.

6.195
Staff feels that a brownfield site capable of supporting a facility proposed for Conneaut is not available within the market area of its product.

GREENFIELD SITES

6.196
Locating potential greenfield sites necessitated contacting various State Departments, Chambers of Commerce, industrial development agencies, and area planning boards. Discreet requests were made for a site that . . .

- had potential for an adequate transportation network, especially for a navigable waterway that can accommodate 600- to 1,000-foot vessels;

- contained an area of 1,500 to 2,000 acres (site could be composed of multiple owners to meet this requirement); and

- was located in the general area of the Great Lakes Basin for raw materials and market purposes.

The parameters used were general to allow for the greatest number of possibilities.

6.197
In addition to contacting various agencies, harbor sites were identified by examining lakefront shorelines using the "United States Coast Pilot for the Great Lakes." Twelve harbors with depths of 29 feet were identified and analyzed using the latest available topographic maps. Sites with extensive industrial developments were eliminated because of the inability to assemble a large land tract. Eventually, three harbor sites were selected as having open greenfield areas of 1,500 to 2,000 acres. These sites are located in Ohio and will be discussed later in this chapter.

6.198
An individual analysis of the States bordering the Great Lakes market area is as follows:

Indiana

6.199
The Great Lakes shoreline of Indiana is small and has a considerable amount of manufacturing activity. Inquiries revealed that it would be almost impossible to acquire a tract of land approximately 1,500 acres along the lake. Only two parcels were identified as available for purchase with both having less than 15 acres apiece.

6.200
Staff consultants discovered that a few years ago a steel manufacturing company acquired 3,000 acres of lakefront land at $20,000 to $40,000 an acre and that 1,000 of these acres may be available for purchase. However, this land is situated south of the interstate highway that crosses Indiana east to west. The applicant, in order to utilize this land, would have to locate inland from the lake thus precluding waterway access.

6.201
Currently, real estate suitable for development is available inland from the lake. The development and use of this area for an integrated steelmaking facility would necessitate a series of obstacles that must be conquered to receive and ship raw materials and finished products. Staff believes that based on the information

provided, Indiana lacks the adequate land adjacent to lakefront waters that could lend itself suitable for greenfield development.

Illinois

6.202
The applicable State of Illinois shoreline/navigable waterway is its Lake Michigan frontage. The shoreline from East Chicago, IN to Wilmette, IL (north of Chicago) has no available tracts of land of the magnitude required. The shoreline from Wilmette to Waukegan, IL was examined for potential waterfront sites and it was noted that north of Wilmette the coast is level with bluffs rising approximately 70 feet at Glencoe and continuing to Waukegan. The U. S. Naval Training Center Harbor at Great Lakes, IL, is 19 miles north of Wilmette Harbor and represents the only applicable harbor area between Wilmette and Waukegan.

6.203
The Waukegan Harbor area, located 38 miles north of Chicago Harbor and 51 miles south of Milwaukee Harbor, was analyzed as a potential site. The channel depth is a major constraint at this location. The Waukegan Harbor Improvement Project conducted by the Federal Government provided for construction of a breakwall, parallel entrance piers, dredging an entrance channel 25 feet deep lakeward at the east end of the north pier, dredging the channel and inner basin 23 feet deep enclosed by piers and revetments, and dredging an anchorage area eight feet deep in the southwest corner of the inner basin. Deepening of the entrance channel and the inner basin remains to complete this project. However, when completed, the harbor would not meet the capabilities of the docking facilities available at Conneaut.

6.204
Another problem at Waukegan Harbor is a littoral drift of sand from north to south, requiring annual maintenance dredging at the harbor entrance. Soundings completed in August 1977 indicated shallow controlling depths 21 feet in the entrance channel, to 16 to 19 feet in the basin of the harbor.

6.205
Staff believes that the extensive revisions needed to reshape the shoreline preclude this area from further considerations as a greenfield site. Staff believes that based on the information provided, Illinois lacks the land adjacent to lakefront waters that could lend itself suitable for greenfield development.

New York

6.206
The portion of shoreline/navigable waterway germain to this analysis is located along Lake Erie and Lake Ontario. Two sites with sufficient land were identified, one near Niagara Falls along the upper Niagara River, and the other one near Dunkirk located on Lake Erie.

6.207
The Niagara Falls site consists of a 700-800-acre industrial park adjacent to an agricultural area that must be acquired to meet the minimum acreage requirements. Staff believes that acquisition of these sites would not be difficult. Reshaping of the existing shoreline and extensive dredging of the upper Niagara River would have to be accomplished to establish dock facilities capable of handling 600-1,000-foot vessels. Staff believes that environmental problems associated with this type of work, in addition to the close proximity of the site to Niagara Falls, would make this area unsuitable for an integrated steelmaking facility such as the one proposed by the applicant.

6.208
The other site is located in Chautauqua County near the town of Sheridan, approximately three miles north of Dunkirk on Lake Erie. This site is presently being considered by the Niagara-Mohawk Power Corporation (a public utility) as a viable alternative site for the proposed construction of a 1,700-megawatt fossil-fuel fired steam electric generating facility.

6.209
This site has access to rail service to Buffalo (east) and Erie, PA, (west) via Norfolk and Western and Conrail. The site is also adjacent to State Route 5 and is approximately four miles from access to Interstate 90. The nearest natural harbor is Dunkirk which is only 16-17 feet deep. Dunkirk Harbor has poor anchorage due to a rocky bottom and shallow waters do not permit mooring at the breakwaters. There is also no breakwater protection to the east of the harbor causing exposure to severe wave action during an easterly storm.

6.210
The Sheridan site would require installation of a complete dock facility. This would require a reshaping of the shoreline and extensive dredging to make this area of Lake Erie conductive to handling vessels to service a steelmaking facility. Staff believes that for the reasons stated above, the Sheridan site is unacceptable and that based on the information provided New York lacks the land adjacent to lakefront waters that could lend itself suitable for greenfield development.

Pennsylvania

6.211
The applicable Commonwealth of Pennsylvania shoreline/navigable waterways is its Lake Erie frontage. The proposed lakefront plant site is located on the far western portion of Pennsylvania and straddles the Pennsylvania/Ohio border.

6.212
Land is available along the Lake Erie shoreline east of the city of Erie. A land use survey notes that 60 percent of the land east of the metropolitan area of Erie is agricultural use. The area is described as gently rolling lake plain dissected by numerous short streams winding their way to Lake Erie. Deep escarpments occur along the lakeshore contributing to gorges. There are no commercial port facilities on the Erie County lakeshore east of the city of Erie, due to the lack of natural shelter. Additionally, lake depths between the Erie Harbor and Dunkirk, NY, are shallow and would require extensive dredging if a site was chosen along this area.

6.213
Staff believes that based on the information provided, Pennsylvania lacks the land adjacent to lakefront waters (except for that area owned by the applicant) that could lend itself suitable for greenfield development.

Ohio

6.214
The applicable State of Ohio shoreline/navigable waterway is its Lake Erie frontage. Three sites were identified as potential greenfield sites: Ashtabula, Huron, and Toledo. These sites are analyzed as follows:

Ashtabula

6.215
Ashtabula, OH, is located on Lake Erie in Ashtabula County, approximately 62 miles east of Cleveland, OH, and 111 miles northwest of Pittsburgh, PA, (refer to Figure 6-4). A site of approximately 2,600 acres is located on the west side of the Ashtabula River approximately 1-1/2 miles from the mouth of the river and the harbor dock area (refer to Figure 6-5).

6.216
The Ashtabula site is trapezoidal-shaped, approximately 2-1/2 miles long (east-west) and 1-1/2 miles wide (north-south). The site is bounded to the north by Carpenter Road, to the west by State Route 45, to the south by Conrail tracks and North Bend Road, and to the

east by additional Conrail tracks and West Avenue. The site is fairly flat but is low in the northwest corner where the site is traversed by Red Brook.

6.217
The possible cost of acquiring the 2,600-acre site could range from $65,000,000 to $650,000,000. In addition to the monetary costs, development in this area may cause the injurious displacement of people and businesses, possible disruption of desirable community and regional growth, loss of community cohesion, and other adverse social impacts. These impacts would not occur in Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed mill.

6.218
The Ashtabula area is served by Conrail and Norfolk and Western Railroads. Conrail's Ashtabula rail yards are along the southern boundary of the site. Highway transportation access to the site is provided by Interstate 90, U. S. Route 20, and State Route 11. Waterway access to the site is by way of Ashtabula Harbor and the Ashtabula River which is maintained at a 27-foot depth upstream to within 1-1/2 miles of the site.

6.219
Electrical power is supplied to the area by the Cleveland Electric Illuminating Company while natural gas is provided by the East Ohio Gas Company.

6.220
Ashtabula is a nonattainment area for total suspended particulates (TSP) and photochemical oxidants. New industrial siting in these areas would first necessitate reduction of these pollutants to attain standards. Conneaut is in a nonattainment area for photochemical oxidants. Offset policies involved in developing attainment standards would favor the Conneaut site.

6.221
Locating the proposed facility in Ashtabula would not be more advantageous than if it was located in Conneaut due to the proximity of each to the other (approximately 20 miles). Impacts that would occur in Conneaut would occur in Ashtabula, however, staff believes that the Conneaut site would be more favorable due to the additional adverse impacts involved with the Ashtabula site (i.e., additional cost of acquiring land, offset policies for TSP, etc.).

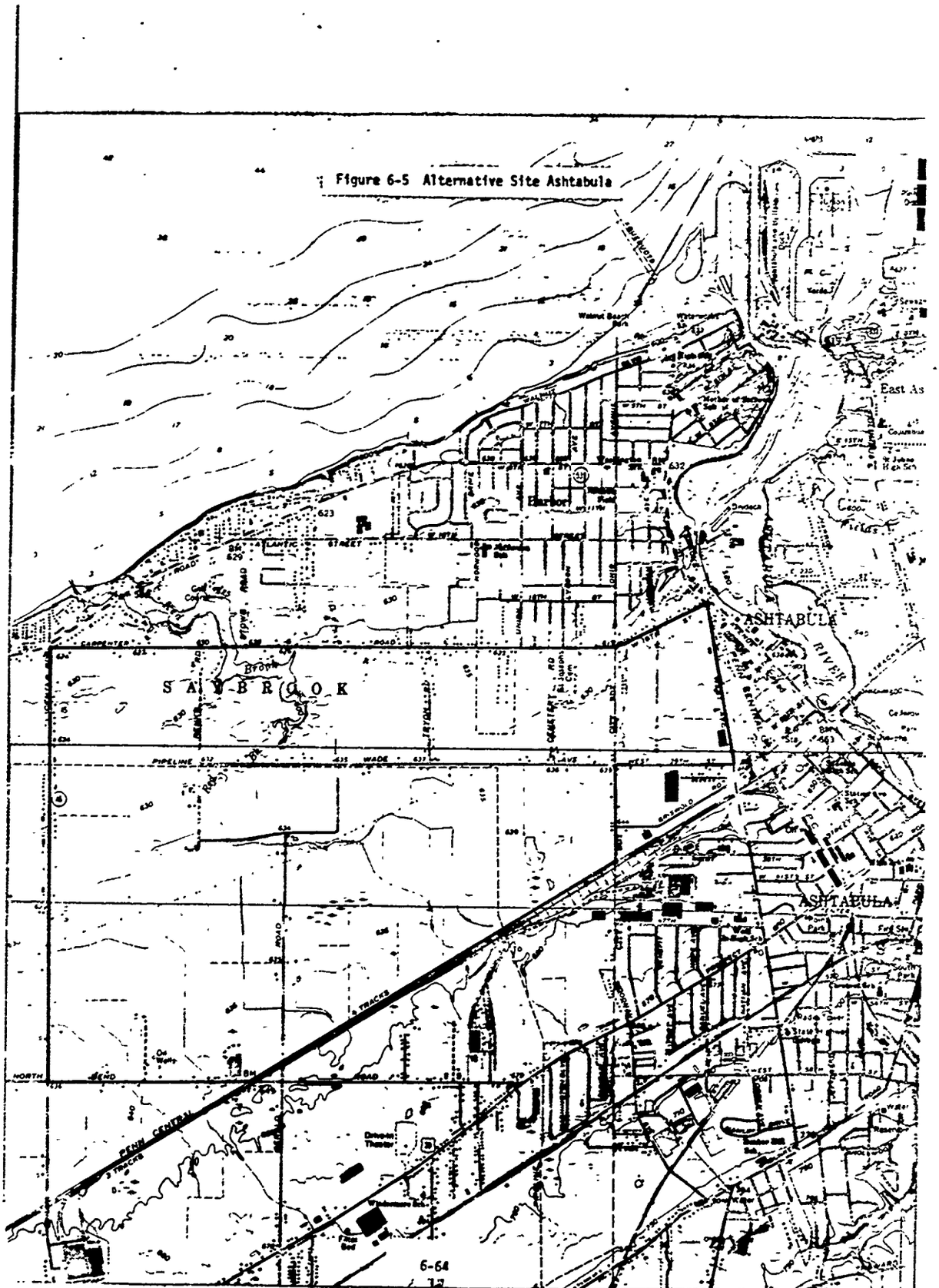


Figure 6-5 Alternative Site Ashtabula

Huron

6.222
Huron, OH, is located on Lake Erie in Erie County, approximately 40 miles west of Cleveland, OH, and 150 miles northwest of Pittsburgh, PA, (refer to Figure 6-4). A site of approximately 2,350 acres is located on the west side of the Huron River about 1-1/2 miles from the mouth of the river and the harbor dock area (refer to Figure 6-6).

6.223
The Huron site is irregular, roughly trapezoidal-shaped, approximately two miles long (east-west), and two miles wide (north-south). The site is bounded to the north by Boos Road and Conrail tracks, to the west by Camp Road, to the south by Fox Road, Rye Beach Road, and Huron Avery Road, and to the east by State Route 2. The Huron site is fairly flat but approximately 30 percent of the area is creek drainage which would require landfill if the proposed plant was constructed there.

6.224
The possible cost of acquiring the 2,350-acre site could range from $58,750,000 to $587,500,000. In addition to the monetary costs, development in this area may cause the injurious displacement of people and businesses, possible disruption of desirable community and regional growth, loss of community cohesion, and other adverse social impacts. These impacts would not occur in Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed mill.

6.225
Conrail Railroad facilities run adjacent to the Huron site while highway access is provided by Interstate 80 and 90, U. S. 250, and State Route 2. Waterway access to the site is via Huron Harbor and the Huron River Channel which are maintained at 29 feet depth upstream to within one mile of the site. The Huron River would need to be dredged approximately one mile to attain the required depth for lake ore vessels.

6.226
Electrical power service to the area is provided by the Ohio Edison Company while natural gas is provided by the Columbia Gas of Ohio.

6.227
Huron and Conneaut are nonattainment areas for photochemical oxidants. Offset policies to achieve attainment standards for photochemical oxidants must be met before the proposed plant can be located at either site.

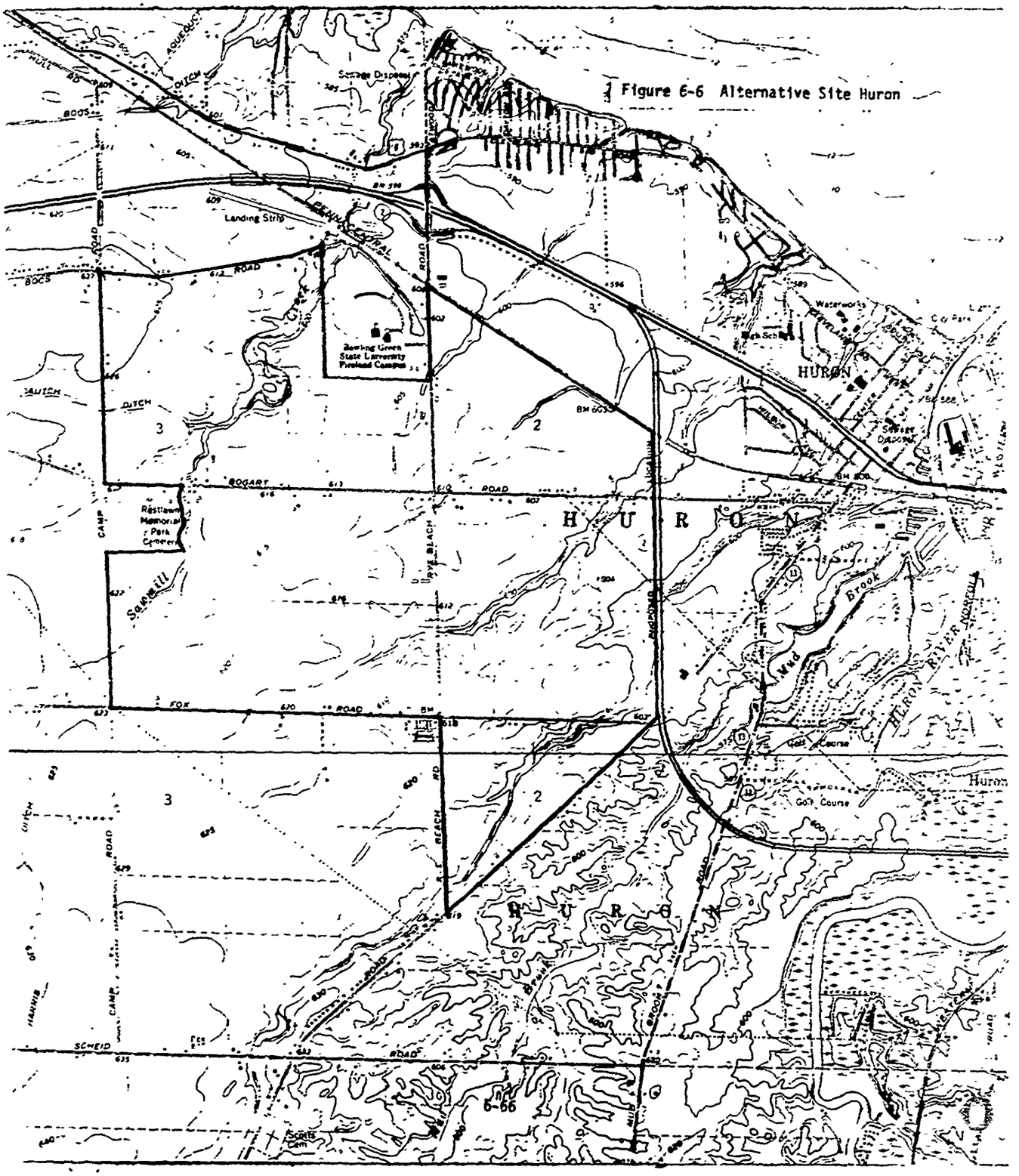


Figure 6-6 Alternative Site Huron

6.228
Locating the proposed facility in Huron would not be more advantageous than if it was located in Conneaut due to the fact that similar impacts would occur in both communities. However, staff believes that the Conneaut site would be more favorable because the Huron site would experience additional adverse impacts (i.e., additional cost of acquiring land, dredging the Huron River, filling in of approximately 30 percent of the site, etc.).

Toledo

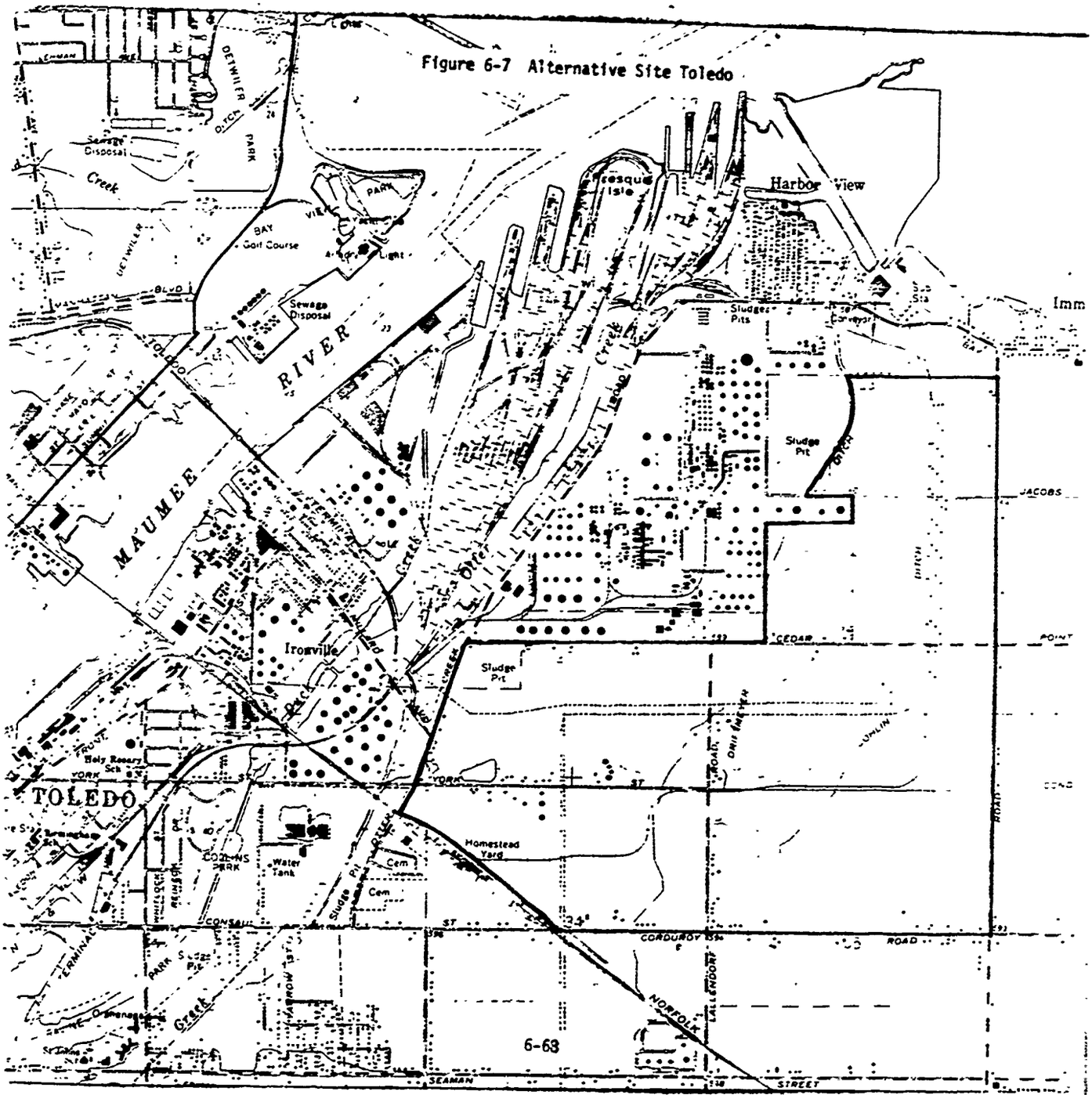
6.229
Toledo, OH, is located on Lake Erie in Lucas County, approximately 110 miles west of Cleveland, OH, and 220 miles northwest of Pittsburgh, PA, (refer to Figure 6.4). A site of approximately 1,670 acres is located on the east side of the Maumee River about 1-1/2 miles from the mouth of the river and the harbor dock area (refer to Figure 6-7).

6.230
The Toledo site has an irregular shape, approximately two miles long (east-west) and two miles wide (north-south). The site is bordered to the north by Cedar Point Road, to the west by Otter Creek Road, to the south by Norfolk and Western Railroad tracks and Corduroy Road, and to the east by Wynn Road. The site is flat with approximately 10 percent of the area a drainage basin which would require landfill if the proposed plant was constructed there.

6.231
The possible cost of acquiring the 1,670-acre site could range from $41,750,000 to $417,500,000. In addition to the monetary costs, development in this area may cause the injurious displacement of people and businesses, possible disruption of desirable community and regional growth, loss of community cohesion, and other adverse social impacts. These impacts would not occur in Conneaut because the applicant owns the undeveloped flatlands needed to construct the proposed mill.

6.232
Norfolk and Western Railroad facilities run adjacent to the Toledo site while highway access is provided by Interstate 75, 80, 90, and 280. Waterway access to the site is the Toledo Harbor (which is maintained at a depth of 27 feet) and the Maumee River Channel (which is maintained at a depth of 25 feet). The Maumee River Channel would need to be dredged approximately 1-1/2 miles to attain the needed depths for lake ore vessels.

Figure 6-7 Alternative Site Toledo



6.233
Electrical power service and natural gas is provided by the Toledo Edison Company with some natural gas being supplied by Columbia Gas of Ohio.

6.234
Toledo is a nonattainment area for total suspended particulates (TSP), carbon monoxide (CO), sulfur dioxide (SO_2), and photochemical oxidants. Any new industrial siting in these areas would first necessitate reduction of these pollutants to attain standards. Conneaut is in a nonattainment area for photochemical oxidants. Offset policies involved in developing attainment limitations would tend to favor the Conneaut site.

6.235
Locating the proposed facility in Toledo would not be more advantageous than if it was located in Conneaut due to the fact that similar impacts would occur in both communities. However, staff believes that the Conneaut site would be more favorable because the Toledo site is not large enough to accommodate the additional land needed for the storage and handling of raw materials. In addition, the Toledo site would experience additional adverse impacts such as the additional cost of acquiring the land, dredging of the Maumee River, filling of approximately 10 percent of the site, offset policies for TSP, CO, and SO_2, and other social, economic, and environmental problems.

Staff Analysis Site Conclusion

6.236
Using the proposed lakefront plant specifications as a basis for comparison, a matrix of basic site selection data was constructed and is summarized in Table 6-7. Staff feels that although these sites may be feasible for some degree of industrial expansion or development, they offer no advantage in being selected over the Conneaut site due to the social, economic, and environmental problems stated earlier for each site.

ALTERNATIVE PROCESSES

RAW MATERIALS

6.237
The applicant intends to use the most up-to-date equipment and handling methodologies to store and distribute the quantities of raw materials used at the proposed Lakefront plant. At the present time, the field of raw materials handling is one in which process engineering is evolving at a gradual rate. Since the latest technology

for materials handling will be employed at the plant and no major changes in equipment or technology are anticipated, the applicant has not considered alternative systems.

COKE PLANT

Wet Coal Charging

6.238
The use of preheated coal, as planned for the facility, is a relatively recent development in the manufacture of blast furnace coke. In conventional coke-making operations, crushed and blended coal is charged wet (without preheating) from larry cars through ports in the top of the ovens. Wet coal does not flow as readily as does preheated coal, therefore, it is necessary to level the coal charge in the ovens after it is discharged from the larry car. To do this, a long bar is inserted through a chuck door at the top of the pushing side oven door by the pushing machine. In this situation, the coking time is several hours longer than for preheated coal since moisture must be driven off to achieve the same final coke characteristics. The primary reason for using coal preheating instead of conventional wet coal charging is to produce good quality coke from the coals available for the proposed plant. If these coals were coked conventionally, the resulting product would not be strong enough for the blast furnace proposed. Thus, supplies of more expensive, higher grade metallurgical coal would be necessary if the coal was not to be preheated. Conventional coking of wet coal also has adverse emission characteristics compared to preheated coal. For example, the necessity of leveling the coal in the oven increases the opportunity for emissions to escape from the chuck door. More importantly, because of the longer coking times required with wet coal, ovens of given size will have lower productivity with wet coal than with preheated coal. Thus, to achieve the same production rate, it would be necessary to have about 30 percent more ovens than proposed, which would result in 30 percent more oven doors, lids, and ascension pipes from which fugitive emissions can escape.

Alternative Charging Techniques With Preheated Coal

a. Pipeline Charging

6.239
An alternative to the proposed method of preheated coal charging could be the use of the totally enclosed pipeline charging system. In this system, the coal is preheated in a manner similar to that proposed at the Lakefront Plant. However, as the coal is metered from the hot coal bins, it is conveyed pneumatically by a specially designed pipeline to the ovens. Steam nozzles placed along the

Table 6-7

Staff Alternative Site Comparison

		Brownfield						Greenfield		
	Conneaut	South	Gary	Lorain	Ohio	Fairless	Texas	Ashtabula	Huron	Toledo
Sufficient land acreage for plant layout	X					X	X	X	X	X
Highway access to site	X	X	X	X	X	X	X	X	X	X
Rail facilities onsite	X	X	X	X	X	X	X			
Harbor available to site	X	X	X	X		X	X	X	X	X
Dock facilities onsite	X	X	X	X	NA	X	X			
Channel depth sufficient for 1,000-foot lake vessels	X		X		NA	X	X			
Adequate water supply available	X	X	X	X		X	X	X	X	X
Available labor market	X	X	X	X	X	X	X	X	X	X
Economic access to market area	X	X	X	X				X	X	X
Economic access to raw materials	X	X	X	X				X	X	X
Nonattainment area for:										
Total Suspended Particulates (TSP)		X	X		X			X		X
Sulfur dioxide (SO_2)			X	X	X					X
Carbon monoxide (CO)					X					X
Photochemical oxidants	X	X	X	X	X	X		X	X	X

length of the pipeline suspend and convey the coal from the bins and remotely actuated dampers in the pipeline divert the steam-coal mixture into the individual ovens. A separate charging main is used to collect the steam, vapors, and fine coal particles that do not settle out in the oven. There are presently four coke plants in the United States using this system. Although they are operating satisfactorily for a new system, not all the problems have yet been resolved. The operating problems most frequently encountered occur in three main categories: plugging, carryover of fines, and low charge density. Plugging of the coal pipelines themselves and of the ascension pipe has been reported. The latest information available indicates that the frequency of such plugging has decreased as experience with the system has grown, although it still occurs from time to time. In the early installations, large quantities of coal fines were carried over into the ascension pipes and the coke oven gas mains during charging. There, the fines contaminated the coal tar, reducing its quality and making it more difficult to handle. The volume of fines carryover has recently been decreased at some installations by careful redesign of the charging line and of the entrance to the ascension pipes. However, some carryover still occurs, and recommended procedure now includes the installation of a separate charging main to avoid deterioration of tar quality.

6.240
Operators of the pipelining systems have also reported inability to achieve the design charge densities. The coal enters the ovens in a fluidized state and does not settle and compress to the same density as does preheated coal charged to the ovens by gravity methods. The low charge density results in lower-than-design productivity from the ovens, thus, somewhat offsetting the production advantages inherent in preheating the coal. As more operating experience is gained on the pipeline systems and as the problems described above are resolved, it is conceivable that operators might discover problems with the reliability of the divertor valves which control the flow of coal into the individual ovens. If these valves stick open, even partially, then coal will gradually continue to accumulate in the affected oven during the coking cycle. This will result in a "greener" coke at the top of the charge which will generate greater emissions during the push. The pipeline concept does offer the intuitive advantage of keeping the ovens essentially closed during the charging step. In practice, the normal charging lids are present on ovens supplied with the pipeline system although all but one are clamped down. The other is weighted in place, but can be lifted off to relieve pressure in the ovens. Experience to date has indicated that emissions from coke oven charging can be reduced by the pipeline system, but several operating problems remain to be resolved. Thus, it seems logical to explore alternative methods of charging which

might overcome some of the operational disadvantages of pipelining and provide more reliable and economical charging.

b. Closed Conveyor Charging

6.241
The precarbon system developed jointly by Didier Engineering GmBH and Bergbau-Forshung GmbH, both of Essen, West Germany, uses an enclosed chain conveyor to charge preheated coal into conventional coke ovens. The preheated coal from the hot coal bins is conveyed by parallel chain conveyors along the top of the coke oven battery. A chute buggy, carrying pantlet chutes which connect with the charging ports in an oven, also travels along the top of the ovens and connects the parallel chain conveyors to the charging ports. When charging preheated coal, the precarbon process requires only two charging holes. However, where wet coal is to be charged with the chain conveyor, four charging holes are used. In addition to the prototype installation at Ruhrkohle AG in Essen, West Germany, precarbon systems have been installed on coke batteries at U.S. Steel's Gary Works, and at the Nippon Steel coke batteries at Oita, Japan. This system is similar to the pipelining system in that it is theoretically a totally enclosed process. In practice, some leakage does occur at expansion joints along the length of the conveyor and at the pantleg chute seals with the conveyors and the charging ports. The carryover of coal fines during charging is reportedly about the same as with the pipelining system, and therefore a separate charging main may be needed on future installations of this type. The applicant has had experience with this system at the Gary Works, and believes it is viable although more expensive than the proposed larry car charging system. The proposed Lakefront plant coke batteries could be retrofitted to the precarbon system in the event that there is a demonstrated advantage relative over the larry car charging techique.

c. The Simcar System

6.242
One other preheated coal charging technique using larry cars has already been tested. The Simcar system, developed by Simon-Carves Limited, England, was first installed at the British Coke Research Center at Chesterfield. Three other systems have been installed, one at British Steel Corporation, the others in Africa. The Simcar system employs a special larry car to transport the preheated coal from hot coal bunkers to the coke ovens. The cars are modified Hartungh-Kuhn cars designed for off-the-main-charging of both wet and preheated coal. Charging emissions are collected by a scrubber system and theoretically ignited by propane pilots or the like, then cleaned in simple water scrubbers. The most recent account of operating experience with the Simcar system was reported by ISCOR in

early 1976 and a summary of their comments on the more serious difficulties associated with the use of the Simcar system is presented below:

- The volume and mass of coal charged varied considerably and inconsistently from oven to oven.
- The capacity of the gas-washing system was inadequate to deal with the quantity of coal fines withdrawn from the oven.
- Neither full combustion nor the prevention of combustion of the charging gases could be achieved.
- The seals on the bottom telescopes of the larry cars did not work.
- Even with off-the-main-charging, sufficient coal fines carried over into the coke oven gas collecting main to appreciably increase the ash and toluene-insoluble content of the crude tar.
- Carbon deposits in the charge holes, ascension pipes, and goosenecks were a definite problem.

Comparing this experience with that of the two on-the-main-charging systems describing previously, the proposed U.S. Steel design for the Lakefront plant seems more likely to succeed than the Simcar approach.

Alternative Pushing and Quenching Systems

a. Pushing Systems

6.243
The conventional method of discharging coke ovens is to simply open the doors on each end of the oven and push the incandescent coke into an open rail car. The emission characteristics of this simple system are known to be adverse. Typically, considerable quantities of particulates and partially combusted coke are blown upward from hot coke falling into the open car. The hooded and ducted pushing control system proposed for the new facility will be considerably cleaner than the conventional technique. An alternative system for control of pushing emissions is the dual car system which includes a covered hot coke car with an attached air cleaner car, usually a scrubber car. In this system, the car cover consisting of a louvered top is opened under the telescoping coke guide at the oven being pushed.

The hot coke falls through the louvers into the car while the gaseous and particulate emissions are continuously withdrawn and transferred through a duct on the side of the unit to the air-cleaning system on the attached emission control car. Air cleaning is accomplished by a high pressure hot water scrubber which is mounted on the locomotive for the coke car. When the push is completed, the louvers on the quench car close automatically as the flow of coke ceases. The louvers remain closed, and the car is exhausted while it is pushed to the quencher tower by the locomotive emission control car. At the tower, the quench water falls through the louvers onto the coke, quenching it from 2,000°F to 338°F. At the completion of the push and quench, the scrubber water from the emission control car is discharged to the water treatment system and a fresh supply of water is taken on for the next quench. This system requires about 16 tons of water per push.

b. Dry Quenching

6.244
A few installations around the world, primarily in the USSR, have used a dry quenching method to cool the coke to reasonable handling temperatures. In these systems, an inert gas is used to cool the coke and transfer its heat to some other process use, e.g., steam generation. The Soviet system for dry quenching, developed by the Russians in the 1960's, is now being marketed in this country. A competing system, developed by Solzer Brothers shortly before World War I, is also being promoted in the United States by Pennsylvania Engineering Company. In these processes, the hot coke is dumped into a bin, and inert gases are circulated through the hot coke to a waste heat boiler where the sensible heat given by the coke is used to generate steam. This method of cooling takes longer than the conventional technique of water quench and, thus, a number of large units would be necessary for high capacity plants. The available reports indicate that maintenance costs for such dry quenching systems are high. The applicant has serious concerns as to the economy, reliability, and safety of dry quenching systems. In addition, the operational features of this system have not been thoroughly demonstrated at facilities producing large quantities of coke. Under these circumstances, the applicant has rejected this alternative since large capital expenditures would be required for a system that, at this time, has questionable benefits.

Formed Coke

6.245
More radical alternatives to the conventional by-product oven technology proposed for this facility include the various formed coke processes now under development around the world. These processes

have in common the substitution in various degrees of cheaper non-coking coals for the conventional high grade coals required by the by-product oven. Formed coke processes are also generally enclosed, continuous or batch-continuous processes having the promise of lower emission rates than conventional technology. Three formed coke processes are currently under development in the United States. The most advanced of the three is the FMC Formcoke process. In this system, coal is ground and converted to a low-volatile char in three separate fluidized beds; the resulting char is cooled, mixed with tar recovered from the fluidized beds, and briquetted. The briquettes are hardened and then cured at elevated temperatures in a direct-fired vertical shaft furnace. Briquette cooling takes place in the lower discharge section of the furnace.

6.246
Another process being developed by Formcoke Associates (Bethlehem Steel Corporation, Republic Steel Corporation, National Steel Corporation, and Consolidated Coal Company) uses a rotary kiln to pelletize coal, char, and pitch. The pellets are subsequently calcined at elevated temperatures to yield a hard coke. Similar formcoke processes are under development in other countries; the DKS formed coke process in Japan; the HBNPC process in France; the BFL and Ancit processes in West Germany; and the Sapozhnikov process in the USSR.

6.247
The "clean coke process" is under development by the applicant's engineers and consultants and concentrates on the yield of valuable by-products along with the coke. The applicant's coke process is a bench-scale process with joint funding from the Federal Government and commercialization is estimated to be many years away. Unfortunately, formed coke has not yet been thoroughly evaluated as a substitute for blast furnace coke produced by conventional methods. The briquettes from the FMC process were first tested in a blast furnance in 1962 by U.S. Steel. Several other large blast furnace tests have been conducted since then by Armco Steel, Inland Steel, and British Steel Corporation.

6.248
Perhaps the most advanced of the foreign processes is the BFL process being commercialized by Lurgi Minerallotechnik. Two demonstration scale plants have been built with the combined capacity of 950 tons per day of formed coke. Together, these plants probably represent the greatest design capacity of any formed coke process, yet they equal only 10 percent of the design capacity of the proposed Lakefront coke facility. Unfortunately, neither plant has been a startling success; in fact, the one built in Germany was shut down by an explosion soon after completion in 1973. The other plant, being

built for British Steel Corporation was scheduled for completion in 1975, but still was not operating in the early months of 1976. The products of the BFL and other foreign processes have been evaluated extensively in many blast furnace tests. Although blast pressures apparently are higher with formed coke, these products do work reasonably well, especially when blended with conventional coke.

6.249
Another possible problem with formed coke processes involves the volume and value of by-products. One objective of the proposed coke plant is to supply the steelmaking operations with coke oven gas. Other valuable by-products such as coal tars, oil, ammonia, and sulfuric acid, would also be produced. The yields of these products from formed coke processes are not well known and probably vary considerably with the types of coal and types of process used. Many processes (e.g., FMC's Formcoke) yield a much lower Btu-value gas. In summary, formed coke processes hold the promise of producing reasonable quality coke from nonmetallurgical coals and as such, they may be more environmentally attractive than by-product ovens. However, no data are available to support this assumption. The formed coke product apparently can be substituted for a sizable fraction of the coke charge without adversely affecting blast furnance operation. However, large-scale formed coke plants (on the scale of the proposed Lakefront plant) do not exist at this time. In addition, this alternative process will generate different types of by-products which could be of lesser value or more difficult to sell on the open market. Also, the formed coke process would probably not generate the same quantity or quality of gaseous fuels. The apparent risk of these alternative-formed coke processes is large and the possible return relatively small. Therefore, the applicant has chosen not to employ any of these processes at the proposed Lakefront plant.

COAL CHEMICAL PLANT

6.250
The basic concept of the coal chemical plant is to strip the coke oven gas (COG) of its entrained constituents and provide a cleaned gas for the plant fuel system. The coking process itself dictates the composition of the coke oven gas. Given the coking process, there are few alternative options for stripping and cleaning, since these sequential steps have been intensively developed in the past to realize the highest possible fuel and chemical values in the COG. The only option associated with coal chemical plant operations is the determination of the final chemistry of the sulfur to be extracted from the gas. This alternative involves the production of either sulfuric acid or elemental sulfur, although either could be produced at the proposed coal chemical plant.

6.251
An alternative preheating system that could be used is the grate-type preheater. The grate-type preheater, developed by Allis Chalmers as part of its grate-kiln sintering system, is a single pass, downdraft, enclosed traveling grate on which the finer stone sizes are placed on top of the coarser sizes and are virtually calcined while the coarser sizes are preheated. In the rotary kiln which follows, the coarse sizes become calcined, while the finer particles are protected from burning because they sink into the kiln load through a sifting action. Grate kiln systems of 300-600-ton capacity are in operation in North America. The grate preheater consumes about five to six million Btu's per ton of burnt lime; similar to the rate consumed by the packed-bed preheater proposed for the Lakefront plant. Each system requires a collection system to remove the dust contained in offgases from the preheater. Environmentally, both schemes are similar in nature. Replacement of the packed-bed preheater with the grate preheater would not change the energy consumption nor have any measurable change in environmental impact over the proposed system.

Alternative Calcining System

6.252
Although lime calcining or burning is a relatively simple operation, a wide variety of calcining systems are used today, including the rotary design proposed for the Lakefront plant. Selection of lime calcining systems depends on such varied factors as type of limestone and fuel available, market requirements, capital and operating costs, labor costs, power requirements, and most recently, air pollution regulations.

a. Vertical Kilns

6.253
Vertical kilns are a strong alternative to the rotary kiln planned for the proposed Lakefront plant, and several types have been developed to supplement the older mixed-feed, producer gas, and side burner natural-gas-fired kilns. Among the newer kilns are the center burner, gas-fired, oil-fired, Peckenbach double-inclined (cascade), and Austrian multiple shaft (parallel flow). The vertical kiln is usually a refractory-lined steel shell, which is generally circular in cross section. Capacities vary from a low of 11 tons per day to a high of 770 tons per day. Most vertical kilns burn only large stone, over three inches and up to 12 inches in size, although a typical size is 5 x 8 inches. However, the newer European kilns are designed to handle smaller sizes, 1 x 3 inches in order to produce a more reactive lime having a low core content. Fuel requirements are

generally under five million Btu per ton of lime, with the modern large-capacity kilns being as low as 3-1/2 million Btu per ton.

6.254
The Austrian kiln is a vertical kiln system which utilizes the parallel flow calcining principle in double- and triple-shafted units. The shafts are interconnected in the burning zone, and while one shaft is being fired, the other is preheated. Fuel and combustion air are supplied to the burning shaft from above, ignite at the upper end of the burning zone, and calcine the lime in uniflow. The exhaust gases then pass into the second shaft, preheating the stone in counterflow. After a 10- to 15-minute interval, the shaft firing is reversed. Cooling air is blown into both shafts simultaneously. Due to the novel heat regeneration system, fuel consumption is reported to be less than 3.5 million Btu/ton. Kilns vary in capacity from 110 tons to 660 tons per day, utilizing typically 1 x 3-inch stone. They are normally gas-fired, although oil firing is also available. However, these units cannot be coal-fired.

6.255
Another alternative vertical kiln system is the annular shaft kiln. The burning process in this kiln is based on counterflow for preheating and calcining and uniflow for residual calcination. Partitions provided by an inner cylinder and by staggered bridges in the burning zone permit even distribution of heat and uniform flow of material down the kiln. Stone as small as 25 millimeters (1 inch) x 75 millimeters (3 inches) can be calcined to produce a soft burnt lime, using either oil or gas firing. Capacities vary from 100 tonnes (110 tons) to 300 tonnes (330 tons) per day, with the reported fuel consumption under 1 x 10^6 kcal/tonne (four million Btu/ton) of lime. Vertical kilns are considered to have the following advantages over rotary kilns: lower capital requirement, lower fuel costs due to higher efficiency, lower loss of stone, lower refractory wear, greater flexibility in starting and stopping the calcined operation, and lower pollution control costs. However, they are not as flexible and versatile as the rotary kilns in treating various grades and sizes of limestone and in their inability to operate on solid fuels. Therefore, the applicant does not intend to use vertical kilns in the Lakefront facility at this time.

b. Other Calcining Systems

6.256
The Rotary Hearth Calciner is newer kiln system for lime. It consists of a preheater, circular hearth, and cooler, all refractory-lined. This kiln fires fluid fuels to burn small stone which is typically sized in the 1:3 ratio. The stone is carried on the hearth in a thin layer, and one revolution of the hearth constitutes the

calcining cycle. Fuel requirements are similar to the rotary kilns; i.e., about 1.3 x 10^6 k/cal/tonne (five million Btu/ton). This system does have some advantages over the rotary kiln since the stone is virtually motionless on the hearth, lowering hearth pollution and stone loss. Also, because of the motionless state of the stone, soft limestone can also be utilized. However, the system requires higher capital and maintenance costs.

6.257
A second alternative calcining system is the fluid bed calciner, designed by Dorr Oliver. This system is generally used for calcining limestone which is friable or decrepitates during calcining. In this process, the limestone is maintained in suspension in a rising current of hot gases until calcined. Kiln feed is normally 6 x 65 mesh. The system, which can be fired with gas or oil, incorporates a fluidized preheater unit and a fluidized calcining reactor, the latter resembling a vertical kiln. Fuel consumption is approximately 1.3 x 10^6 kcal/tonne (five million Btu/ton). Fluid bed calciners are available in sizes ranging from five to 250 tonnes (5.5 to 280 tons) per day. This system does need a more elaborate pollution control collection system than the rotary kiln proposed for the Lakefront plant. However, it is ideal for calcining fine limestone.

6.258
Another alternative calcining system is the Corson Kiln. This calciner consists of a shaft-type preheater and a horizontal calcining vessel. The calciner is vibrated on a time cycle to discharge the small size quicklime particles to the cooler. Kilns have a capacity around 75 tonnes (82 tons). It is not an ideal calcining system for lime required for a steel plant because it is designed to produce highly reactive lime. Plant capacities are not high enough to be competitive with the rotary kiln system.

Alternative Cooling System for the Proposed Rotary Kiln

6.259
The planetary cooler consists of eight or more tubes approximately 1.2 meters (4 ft.) x 6 meters (20 ft.) in size. These are mounted at the kiln discharge end. The lime is moved in each tube by conveyor flights counterflow to the cooling air. In this type of cooler, as in the contact type cooler, the hot gases can be returned to the kiln as secondary air, thus improving fuel efficiency. The planetary and contact types of coolers are of similar efficiency, but the contact type has a lower maintenance cost.

6.260
The rotary cooler consists of a rotary drum or a system in which the lime is cooled in the rotary vessel by ambient air and is generally

not as efficient as the contact-type cooler. During operation, increased attrition losses occur necesitating a higher degree of pollution control than required with the contact cooler.

SINTER PLANT

6.261
The basic principles of design and configuration for sinter plants are essentially similar, differing only by proprietary internal engineering details. Changes in the internal design will not alter the environmental impact of sinter plant operations, therefore, the applicant did not consider alternatives.

BLAST FURNACE

Blast Furnace Top

6.262
The blast furnace is a vertical shaft reactor specially designed for the quantity production of molten iron from ore. It has been developed into a highly efficient process unit in the course of the past two centuries. Under the historical development, the sizes of blast furnaces and their productivities have increased to current iron-making rates of 9,900 to 13,200 tons per day for the larger furnaces. The furnaces planned for the proposed plant are toward the lower end of this range. These iron production rates require charging raw material quantities of 22,000 to 27,500 tons per day of material handling rates up to the order of 1,100 tons per hour. To accomplish the requisite charging rate and maintain smoother operation of the furnaces with minimal environmental impact, the applicant has decided to employ semi-continuous feeding of the raw materials, with the new bell-less top designed by Paul Wurth and Co. of Luxembourg. As an alternative, the classical multiple bell system could be used. However, due to the very high top pressure anticipated (two or three atmospheres), a four-bell system or a two-bell plus seal valve system would probably have been selected rather than a two-bell, or three-bell system. As a recent example, Nippon Kohan has installed such a four-bell top at its Fukuyanna steel works.

6.263
Compared to the conventional multiple bell top, the bell-less top proposed for the Lakefront plant offers several potential advantages which primarily are derived from its technical features. Additionally, it also offers environmental implications for a decrease in particulate emissions and possibly a reduction in the number of blast furnace slips causing the emergency value to open. The articulated chute of the bell-less top distributes the various constituents of the burden in any desired way, whereas the large bell

of the conventional system shows much less flexibility. The improved burden distribution results in a lesser tendency to channeling, which in turn implies less dust being generated by abrasion in the channels. Also, the even distribution of the burden inside the furnace allows for smooth operation and thus enabling the occurrence of slips to be minimized. In comparison, obtaining a good seal is difficult with the large diameter bells because warping of the bell and seating rings occurs rapidly under the fluctuating thermal and mechnical loads. Poor sealing causes difficulty in keeping the blast furnace under pressure. Expensive and frequent maintenance is necessary to correct this condition. For these reasons, the conventional bell top system will not be used on the blast furnace at the proposed Lakefront plant.

Oxygen Enrichment of the Blast

6.264
The air blown into many blast furnaces is enriched with oxygen. The extent of this practice is usually limited to a few percent with the wind containing about 23 percent oxygen instead of its natural composition of 21 percent. As less of the combustion heat generated at the tuyere level is being convected away by nitrogen, an increase of the flame temperature occurs. An increased flexibility in regulating the flame temperature is obtained through steam and hydrocarbon injection. The applicant's decision as to whether or not oxygen enrichment should be used is based on a complex set of technical and economic considerations. At the proposed plant, the blast furnace stoves will preheat the air to 2,000-2,300°F. The fuel oil injection into the furnaces will average 150 lbs/ton of pig iron, which is close enough to the practical maximum of about 200 lbs/ton above which problems of inadequate fuel combustion occur. The average is set below the maximum, so that the fuel injection rate can be used as a control variable for operating the furnace. The increase in flame temperature brought about by oxygen injection would have to be offset by steam or fuel oil injection in order to control the process. Based on present economic conditions, the productivity of the furnace would not increase enough to offset the cost of large amounts of electricity required to produce the injected oxygen. There are no recognized direct environmental benefits associated with oxygen enrichment. The option of enriching the blast with oxygen was therefore discarded for the present time. However, in the future the applicant may reconsider the possibility of the oxygen enrichment providing such a process could be justified from an economic standpoint.

Coal Injection

6.265
The injection of fuel oil through the tuyeres of a blast furnace can be used a partial substitute for the metallurgical coke. Minor variations of this technique include the injection of tar and pitch separated from the raw coke oven gas in the by-product plant associated with the coke ovens. An alternative to the use of these liquid hydrocarbons is the injection of powdered coal. The principle of coal injection has been successfully demonstrated by Armco Steel Corporation at its Ashland, Kentucky, Works. Coal injection requires a more complex and capital intensive mechanical system than liquid or gaseous hydrocarbon injection. In the prime example in the United States, the coal is dried with pretreated air. It is then pulverized to the same extent required for pulverized coal combustion in steam boilers and stored under inert atmosphere (CO_2+N_2) in a holding tank at slightly above atmospheric pressure. A series of standard compressors provides the necessary gases to pneumatically convey the coal through the circuit where it is injected through lances inserted along the axis of each tuyere. The coke replacement ratio can be expected to be about the same as that achieved with the proposed liquid fuel injection technology.

6.266
The pollution problems specific to coal injection are those associated with the coal handling and storage from unloading until actual input to the injection system described above. The coal grinding, powdered coal storage, and injection circuit is entirely enclosed and does not produce any emissions. Coal injection has not yet been proved on blast furnaces as large as those proposed for the Lakefront plant, nor has it been tested under the high pressures contemplated. The coal injection system will require more delicate operation settings and increased maintenance making it less attractive than liquid or gaseous fuel injection systems. At this point in time, high costs and questionable benefits have caused the applicant to reject this alternative.

STEELMAKING

6.267
In an integrated plant, the only alternative to high capacity oxygen process steelmaking is the use of the open hearth furnace. This practice employs a reverberatory-type furnace with a large shallow hearth and open flames for heating. In general, the furnace hearth, walls, and roof are usually constructed of individually laid and fitted refractory brick. The charge is placed on the refractory hearth and melted by luminous flames alternately generated from

either end of the hearth. Waste heat in the combustion gases is partially recovered by passing them through brick checkers at either end of the furnace, a practice known as "regeneration." When the gas flow is reversed, the incoming combustion air is directed into the heated brick checkers and preheated to attain the high flame temperatures necessary to melt and refine the raw materials. The process requires low sulfur fuels to prevent sulfur transfer to the molten slag and steel.

6.268
The common practice is to charge scrap and hot metal in proportions between 40 and 60 percent. The scrap is charged first and brought near its melting point. Hot metal is then poured from ladles into the furnace, and refining is achieved by proper additions of fluxing and oxidizing agents. Undesirable elements migrate into the slag during a segment of the cycle known as the "carbon boil." The traditional cycle times required to produce a heat were nominally from eight to 12 hours. This time has been shortened by injection of oxygen through roof lances immersed into the bath, similar in procedure to oxygen steelmaking. Modern open hearths consume about 1,200 cubic feet of oxygen per ton of raw steel and produce a heat in five to six hours. The physical characteristics of the open hearth easily allow leaks from the doors and the roof. Effective control of its air emissions is extremely difficult so that air cleaning devices of exceptionally large capacity are required. Air pollution problems alone are a severe deterrent to the use of open hearth furnaces. This process has been used by the industry for many years; however, because of its lower efficiency and unfavorable environmental characteristics, it has been progressively displaced by basic oxygen furnaces. The open hearth process declined to 27 percent of the raw steel production in 1972, and its share is expected to become insignificant by 1990.

SLAG PROCESSING

6.269
The processing of iron and steel slags has been developed to maximize recovery of resources which are readily salable on the open market. Other methods examined by the applicant would result in increased proportions of solid waste and a decline in usable quantities of by-product. At present the applicant does not consider those methods to be viable alternatives, since no environmental benefit will be realized.

CONTINUOUS CASTING

6.270
The alternative to the continuous casting of steel slabs is conventional ingot casting of the molten steel followed by hot-rolling of

the ingot in a primary breakdown mill to slabs. The main advantage of continuous casting of slabs over the ingot casting - hot rolling process is that it eliminates the need for the primary breakdown step. In addition, the yield from molten steel to slabs is about 10 percent greater than that obtained by ingot casting followed by primary breakdown to slabs. In ingot casting, the steel from a completed heat would be tapped from the steelmaking furnace into a teeming ladle. The ladle is moved by an overhead crane to a pouring platform, where the steel is then poured or "teemed" into a series of prepared ingot molds of the required dimensions. After solidification of the steel, an ingot stripper removes the molds from the ingots, usually while they are still at red heat. The hot ingots are placed in tightly covered soaking pits that are equipped with fuel burners to supply heat to these pit furnaces. There the ingots are heated to and held ("soaked") at the desired temperature for rolling so as to equalize the temperature throughout the cross section of the ingots. The ingots, after soaking, are hot-rolled in a primary breakdown mill to appropriate intermediate shapes of slabs or blooms suitable for subsequent hot rolling to mill products. During teeming of ingots, the ladle-to-mold stream is repeatedly exposed to atmospheric oxidation for filling each ingot mold and while the molten metal is rising in the mold. Thus, this step is source of uncontrolled emissions. The particulate emissions are much lower in continuous casting because the molten metal stream is shrouded to reduce exposure to the atmosphere between the ladle-to-tundish and tundish-to-mold flow. Insulating flux or powder covers liquid surfaces in the tundish and molds. In addition, there are other sources of uncontrolled emissions during ingot casting including preparation of ingot molds, (i.e., coating with mold wash) transportation of molds to and from the pouring platform; welding repair of ignot molds, and handling refractory grain. These sources are eliminated with continuous casting.

ROLLING MILLS AND SCRAP PREPARATION

6.271
The applicant has indicated that process alternatives to the hot strip and plate mill do not exist at this time. Similarly, the applicant has not identified alternative scrap handling procedures which could be employed at the proposed Lakefront plant.

ALTERNATIVE ANCILLARY FACILITIES

Transportation

Incoming Shipments

6.272
During the plant operations, phase ore and limestone originating from ports in the Great Lakes could be transferred by rail or truck via inland routes. The use of land surface transportation as opposed to the use of lake vessels is more costly and requires a greater commitment of energy per ton-mile. Coal shipped from mines in Pennsylvania, West Virginia, Maryland, and Ohio, could be transported by truck rather than rail, but at much higher costs and greater usage of petroleum products. In addition, the substitution of surface transportation for lake transportation and the use of trucks instead of rail facilities for coal shipments will have certain adverse environmental effects. For example, the number of slower moving trains will increase causing the blockage of roads and the interruption of community emergency services. An increase in truck traffic will degrade air quality; contribute to highway congestion; require more frequent maintenance of roads and highways; and increase noise levels in certain areas especially intersections. In summary, the use of alternative modes of transportation for incoming materials does not appear practical in terms of social, economic, and environmental considerations.

Outgoing Shipments

6.273
The outgoing shipment of products to inland destinations during the operations phase cannot be accomplished using waterborne transportation. However, plant product can be shipped using rail, or truck transportation. A heavier dependence on railroad facilities would reduce the traffic congestion, noise, and emissions associated with truck traffic.

ACCESS TO THE PROPOSED LAKEFRONT PLANT

6.274
As indicated earlier in this statement, the applicant prefers the Interstate 90 direct access plan for the proposed Lakefront facility. However, several alternative plans have been studied by the applicant including the U.S. Route 20 Bypass Plan and the no highway network improvement option.

U.S. Route 20 Bypass Utilizing Two Access Roads

6.275
Under this proposal, a bypass would be constructed around downtown Conneaut to alleviate traffic congestion. The bypass would begin at Route 20 in the vicinity of Dibble Road to the west of Conneaut and would terminate at Route 20 and State Line Road to the east of the city. In all probability, the highway would be a controlled access road with a direct connection at Ohio State Route 7. In Pennsylvania, the bypass will have a direct connection with Interstate 90 through the extension of U.S. Route 6N northward directly into the Lakefront site. The alignment, design, and construction of this bypass is the responsibility of the Ohio and Pennsylvania Departments of Transportation and the Federal Highway Administration.

6.276
The bypass would effectively divert plant-related traffic around Conneaut leaving only that traffic which actually originates in the city itself. Traffic from farther west on Route 20, such as North Kingsville, would use this bypass. Traffic approaching the Lakefront plant from the west on Interstate Route 90 could be expected to split more or less evenly between the Ohio State Route 7 interchange and then joining the new bypass route at its intersection with Ohio State Route 7, or continuing on to the U.S. Route 6N extension to gain access to the plant. Traffic coming up from the south on Ohio State Route 7 could also be expected to use both of these access points in a similar manner. On the Pennsylvania side, all westbound traffic on Interstate 90 bound for the Lakefront plant would exist at the U.S. Route 6N interchange and then would have the option of continuing on U.S. Route 6N to the site or turning onto U.S. Route 20 and entering the site at State Line Road. Options for those vehicles using the other major Pennsylvania approach roads such as U.S. Route 6N, U.S. Route 20, and Pennsyvania State Route 5 are similar. Projected peak traffic flows on the bypass during 1981 are shown in Figure 6-8. As indicated, there are four critical locations where traffic congestion would result. These include the State Line Road entrance to the mill, and three intersections along U.S. Route 6N. All of these locations could be expected to operate at a level of service characteristic of forced (jammed) flows. The intersection of U.S. Route 20 and State Route 5 would be at level of Service E, also an undesirable condition. The remainder of the network would be at level of service C or better (B or A).

6.277
Peak hour conditions in 1985 could be expected to be similar to those in 1981, as shown in Figure 6-9. While the number of construction workers on site would have declined, this reduction would be somewhat

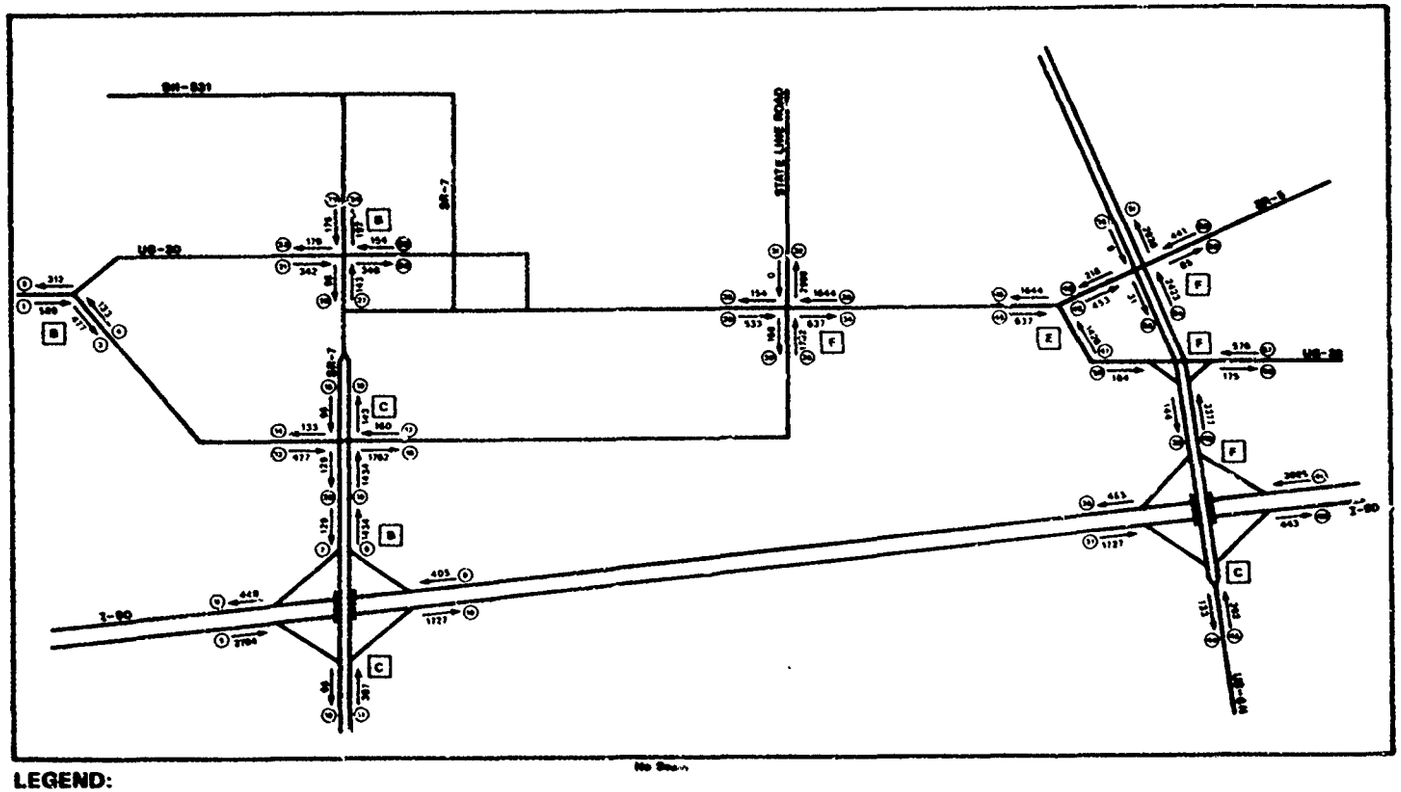


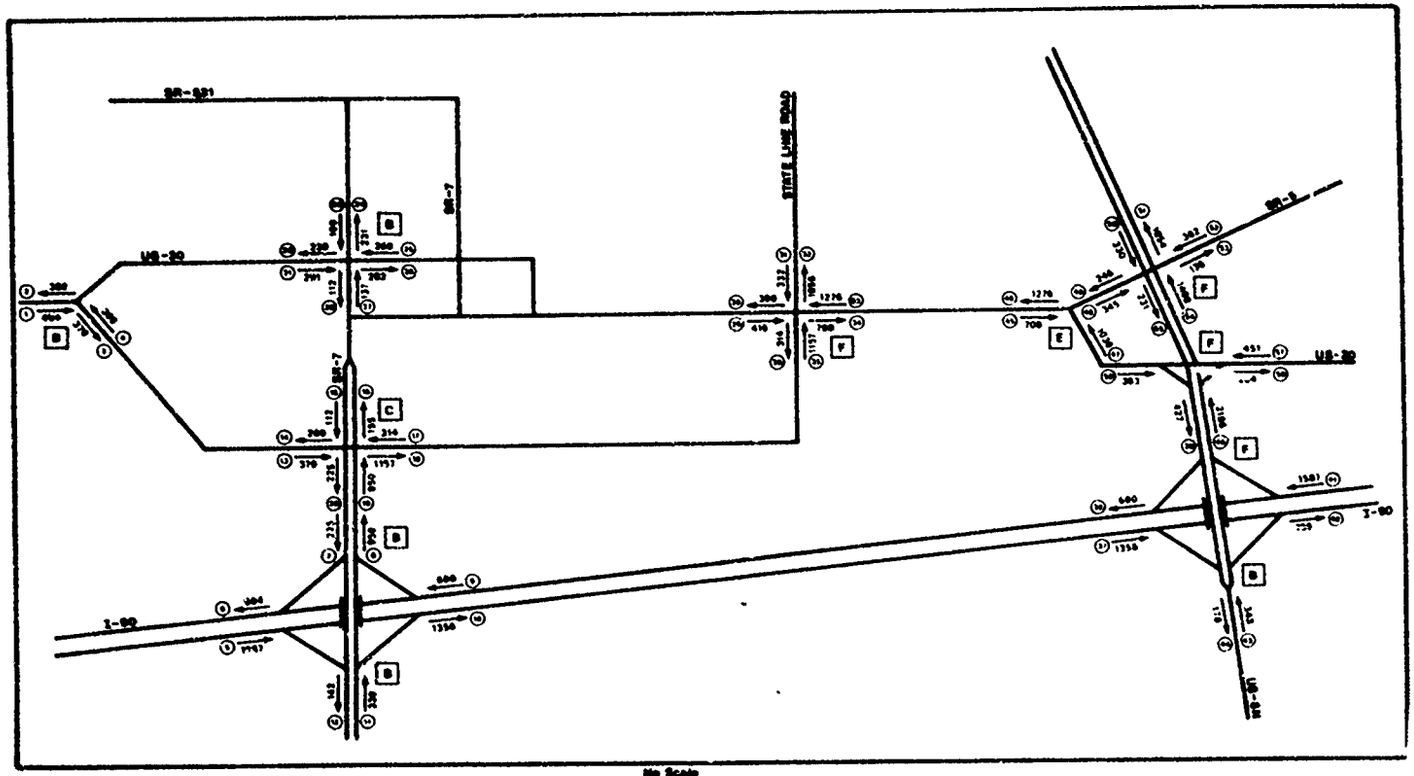
Figure 6-8 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1981 (U.S. ROUTE 20 BYPASS, 2 ACCESS ROADS)**

offset by a large increase in the number of permanent U.S. Steel workers employed. Additionally, in 1981 during the 7-8 a.m. period under study, all plant-related traffic would be entering the mill. However, in 1985, the three-shift production schedule would be in effect, resulting in both entering and exiting traffic during the 7-8 a.m. period as the shift change occurs. This two-directional traffic flow increases the number of potential traffic conflicts at each intersection and thus results in a poorer level of service than might result if traffic was all going in the same direction. Here, also, the transient traffic situation is represented at its peak of congestion in 1985.

6.278
The expected peak hour conditions in 1990 are shown in Figure 6-10. There would be some improvements in conditions at a few key locations, although trouble areas would still exist. Again, the absence of construction workers has been partially offset by a further increase in permanent U.S. Steel employment. This offsetting relationship is particularly significant in view of vehicle occupancy characteristics. For example, a decrease of 250 construction workers would remove only 100 automobiles from the network while an increase of 250 permanent U.S. Steel workers would add 250 additional automobiles to the network. This peak hour traffic represents a continuing or stable traffic condition over an extended time period. In summary, this alternative experiences several peak hour critically congested locations in 1981 and 1985 and to a lesser degree in 1990.

U.S. Route 20 Bypass Utilizing Four Access Roads

6.279
This plan is a variation of the alternative proposal described previously. Although it still involves the construction of a bypass, the number of access roads to the Lakefront site will increase from two to four. For example, the four-way at grade intersection at State Line Road would be replaced with a grade-separated interchange near Thompson Road. In this case, Thompson Road would be used to provide direct access to and from the plant. State Line Road would serve as the access/egress facility for local U.S. Route 20 traffic in this area. On the Pennsylvania side, U.S. Route 6N would be extended from its present terminus into the plant site, as it was for the two-access road variation. However, in this case, the extension of U.S. Route 6N would bridge Pennsylvania State Route 5, providing no connection between the two roads at that point. Pennsylvania State Route 5 and some U.S. Route 20 traffic bound to and from the mill in this area would use a new access/egress road located at Rudd Road. Peak hour traffic flows and level of service conditions during the years 1981, 1985, and 1990 are shown in Figures 6-11 through 6-13, respectively. While the arrangement would no doubt improve



LEGEND:

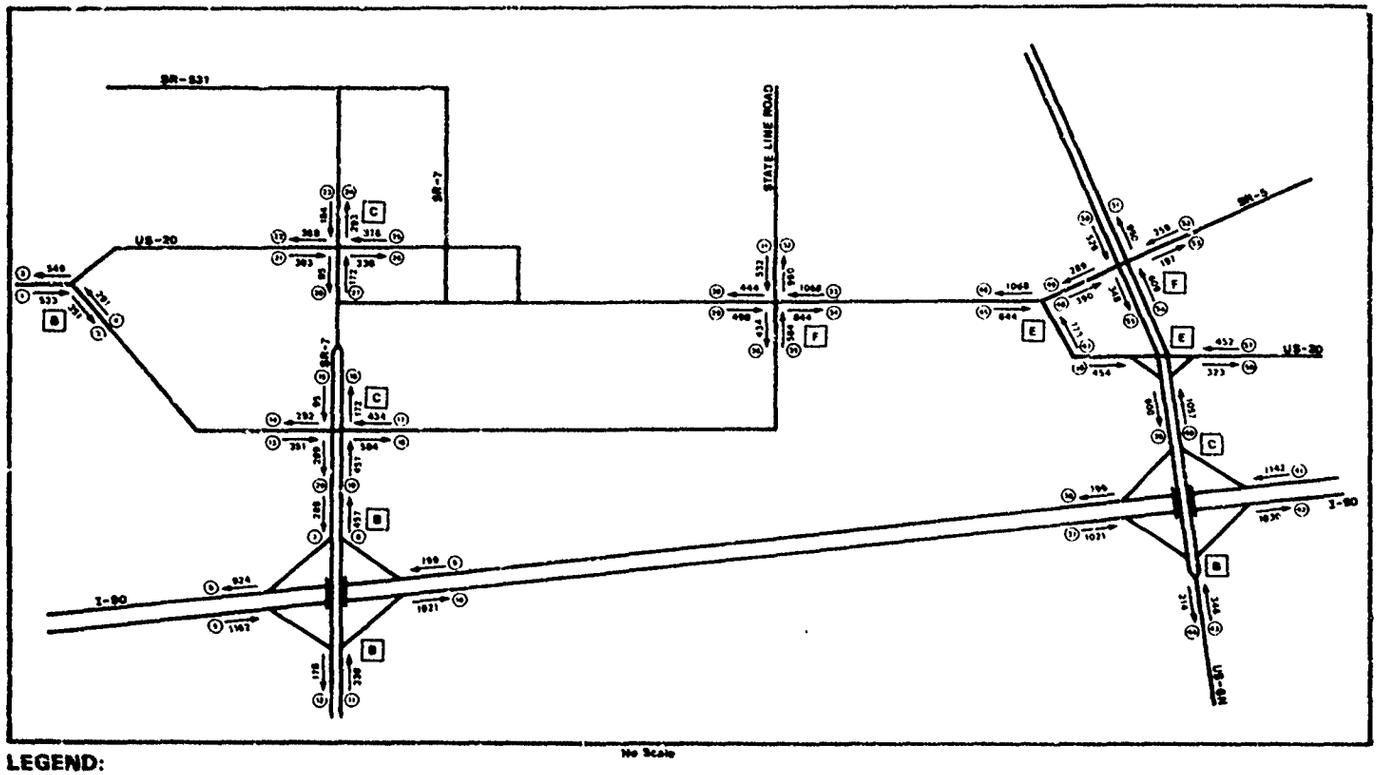
876 — Number of Vehicles

6 — Appendix Table Location Reference Number

New Roadways

F — Level of Service

Figure 6-9 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1985 (U.S. ROUTE 20 BYPASS, 2 ACCESS ROADS)**



LEGEND:

876 → Number of Vehicles

(6) Appendix Table Location Reference Number

New Roadways

[F] Level of Service

Figure 6-19 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1990 (U.S. ROUTE 20 BYPASS, 2 ACCESS ROADS)**

safety and expedite traffic flows to some extent, the advantages which it offers are not very significant with regard to resulting level of service. Problem areas would still exist at the State Line Road entrance to the mill, at the intersection of Pennsylvania Route 5 and U.S. Route 20, and at two intersections along U.S. Route 6N. Four of these intersections would operate at level of service F during 1981, and 1985, and two in 1990. Again, however, the same type of traffic design measures as those discussed in the previous subsection would be applied to this scheme to improve over and specific travel conditions. It should be noted that 1981 and 1985 represent peak congestion periods during these years, while 1990 represents a stable or continuing traffic condition.

No Highway Network Improvements

6.280
Under this plan, no improvements will be made to the existing highway network outside the proposed Lakefront site, and only one access road to the plant will be maintained along the State Line Road alignment. With no highway improvements, traffic from Study Areas 1 through Area 6 in Ohio, as well as some traffic from Mercer, Lawrence, and Butler Counties in Pennsylvania approach the site from the west and south on Ohio State Route 7, Interstate Route 90, or U.S. Route 20. Traffic from Interstate Route 90 would exit at the Ohio State Route 7 interchange. Flows on all three major roadways would have to pass through the downtown areas of Conneaut before continuing east on U.S. Route 20 to the mill site, with the reverse procedure required for departing traffic. From the east, traffic generated by the steel mill in Study Areas 7 through 11 and farther east would use four principal routes, namely Pennsylvania State Route 5, U.S. Route 20, Interstate Route 90, and U.S. Route 6N. However, as with the western part of the network, site access would be gained via one section of U.S. Route 20 in West Springfield which would carry all mill-related traffic. This scheme was analyzed to determine whether or not it could accommodate peak traffic flows during each of three study years: 1981, 1985, and 1990. Figure 6-14 shows steel-mill-related traffic flows for the 7-8 a.m. period for 1981 and resulting level of service determinations at key locations on the network. Examination of Figure 6-14 shows that in 1981 there would be a total breakdown in traffic flow throughout the network in the immediate area of the steel mill. Five key intersections would operate a level of service F: U.S. Route 20 and State Line Road, U.S. State Route 20 and Pennsylvania State Route 5, U.S. Route 20 and U.S. Route 6N, Interstate 90 and U.S. Route 6N, and the center of Conneaut. Additionally, key links in the network, such as U.S. Route 20, could be expected to become totally incapacitated. Thus, it is clear that the existing network along would be totally inadequate to handle the project traffic volumes in 1981. Some improvements in traffic

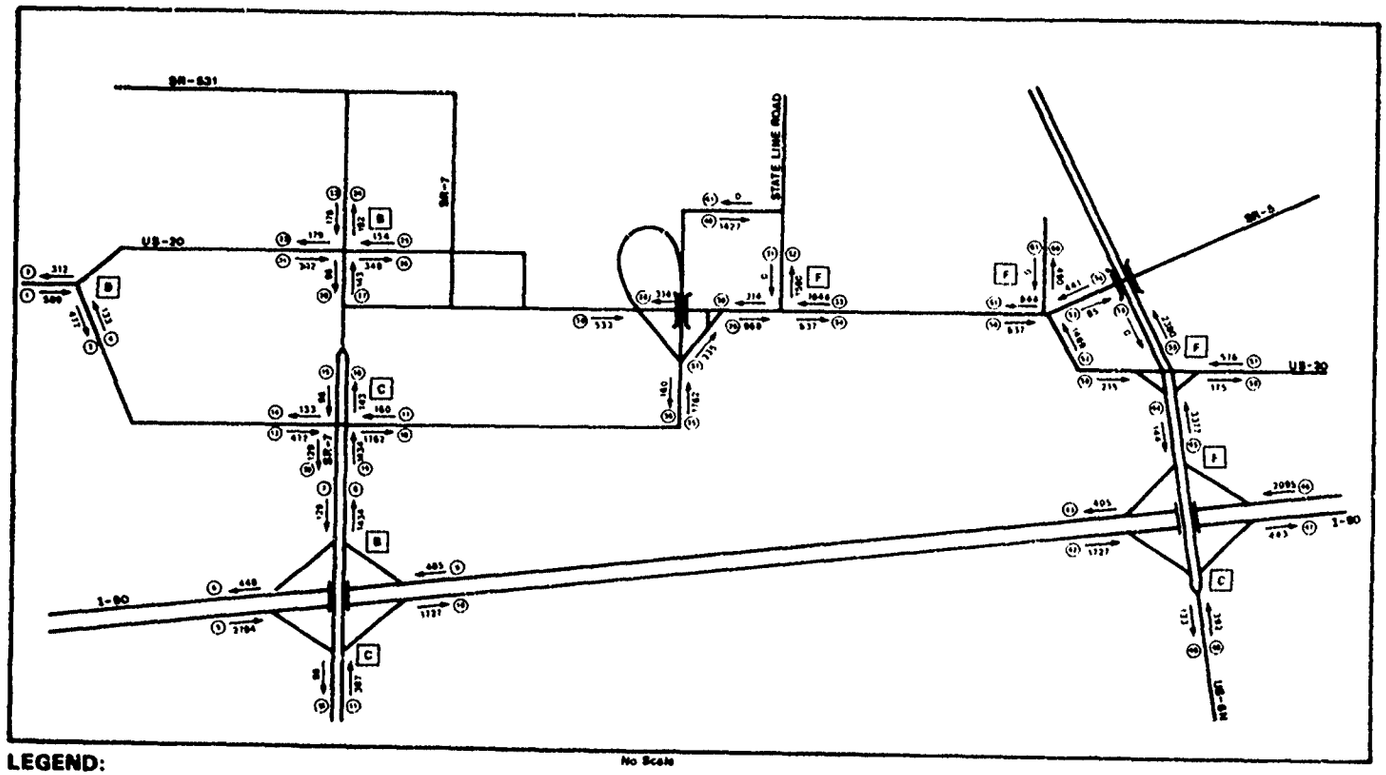
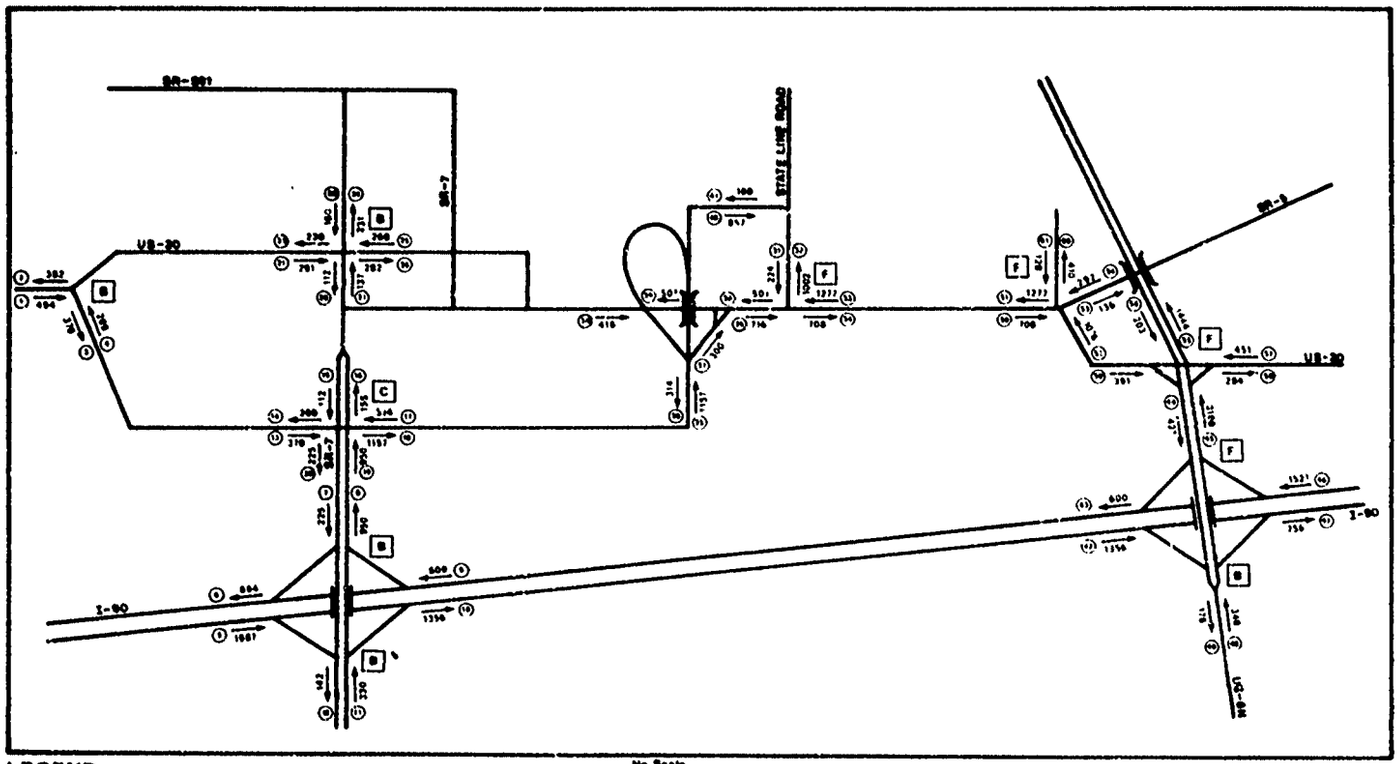


Figure 6-11 PROJECTED TRAFFIC FLOW IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM –1982 (U.S. ROUTE 20 BYPASS, 4 ACCESS ROADS)



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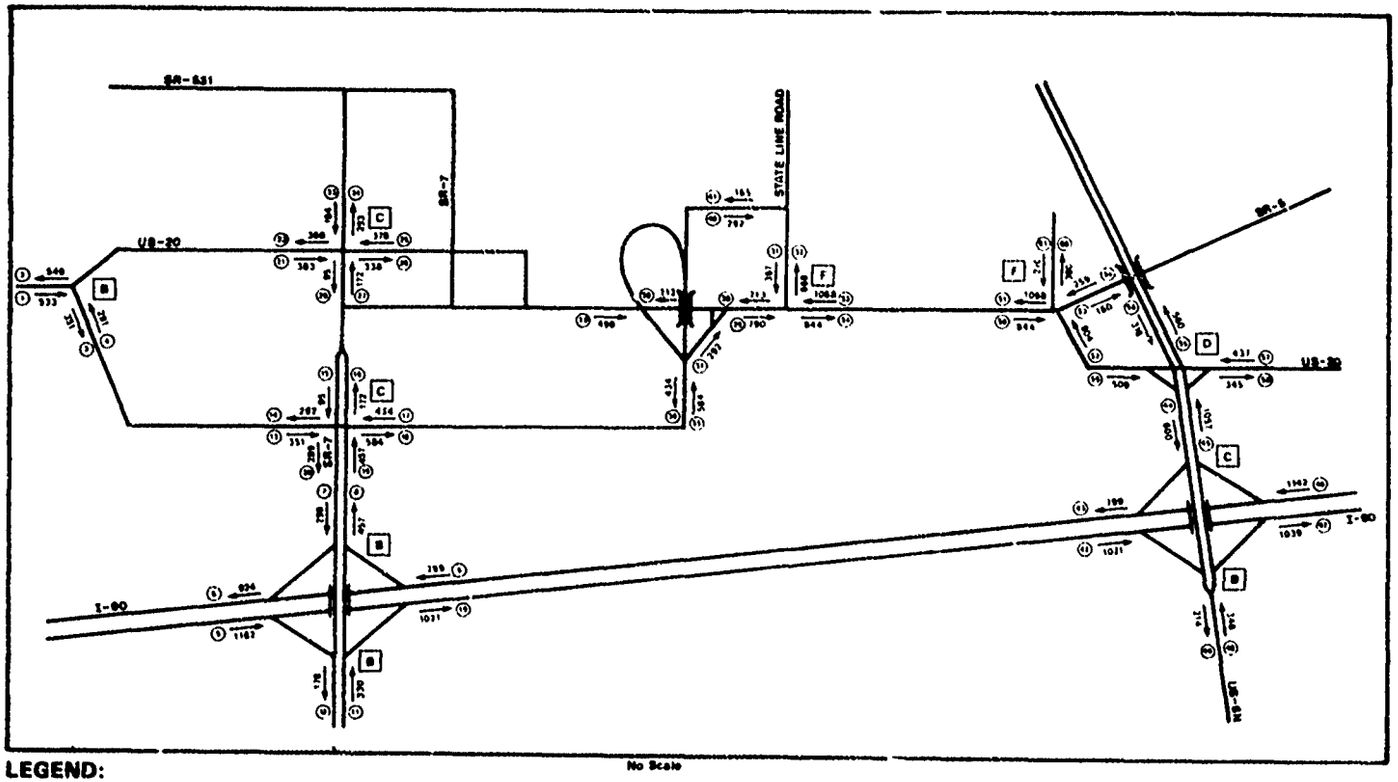
876 — Number of Vehicles

(A) — Appendix Table Location Reference Number

New Roadways

F — Level of Service

Figure 6-12 **PROJECTED TRAFFIC IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1985 (U.S. ROUTE 20 BYPASS, 4 ACCESS ROADS**



LEGEND:

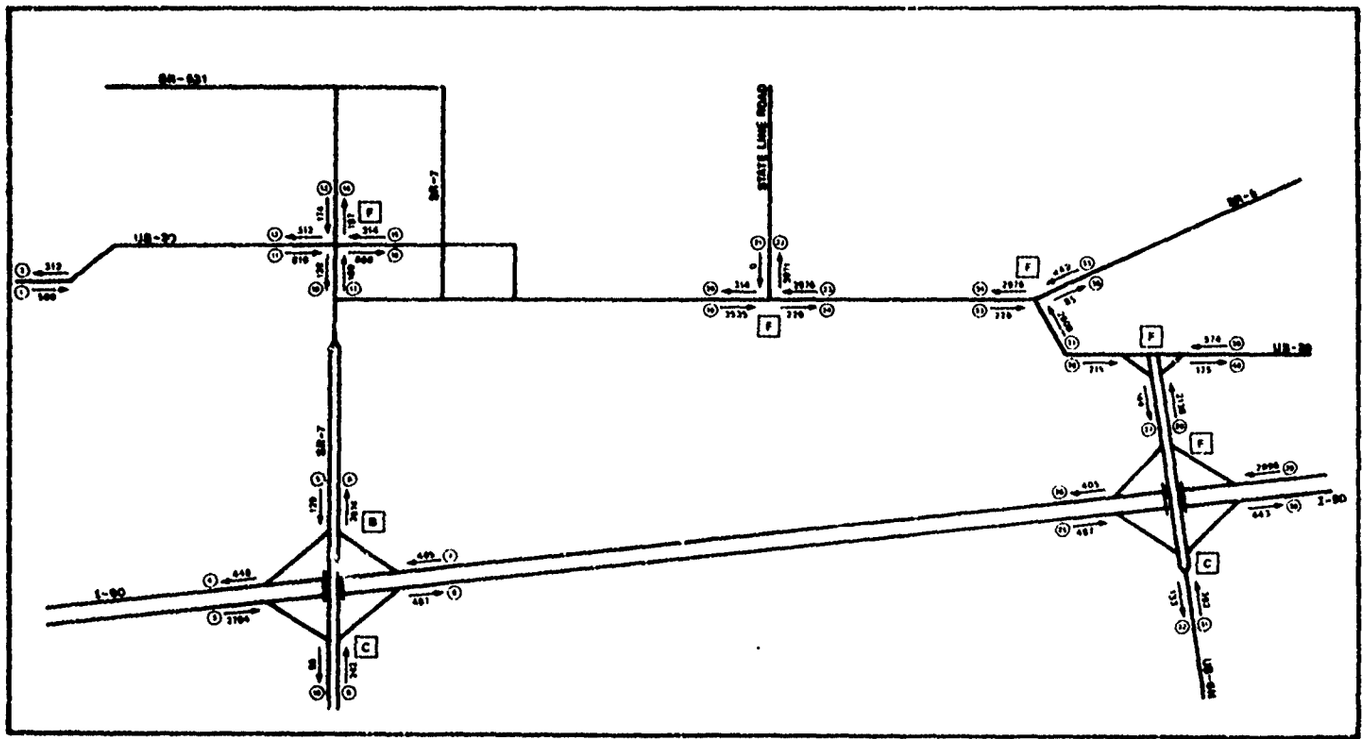
876 → Number of Vehicles

(8) Appendix Table Location Reference Number

New Roadways

[F] Level of Service

Figure 6-13 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1990 (U.S. ROUTE 20 BYPASS, 4 ACCESS ROADS)**



No Scale

LEGEND:

576 ➡ Number of Vehicles

(6) Appendix Table Location Reference Number

——— New Roadways

[F] Level of Service

Figure 6-14 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1981 (NO HIGHWAY NETWORK IMPROVEMENTS)**

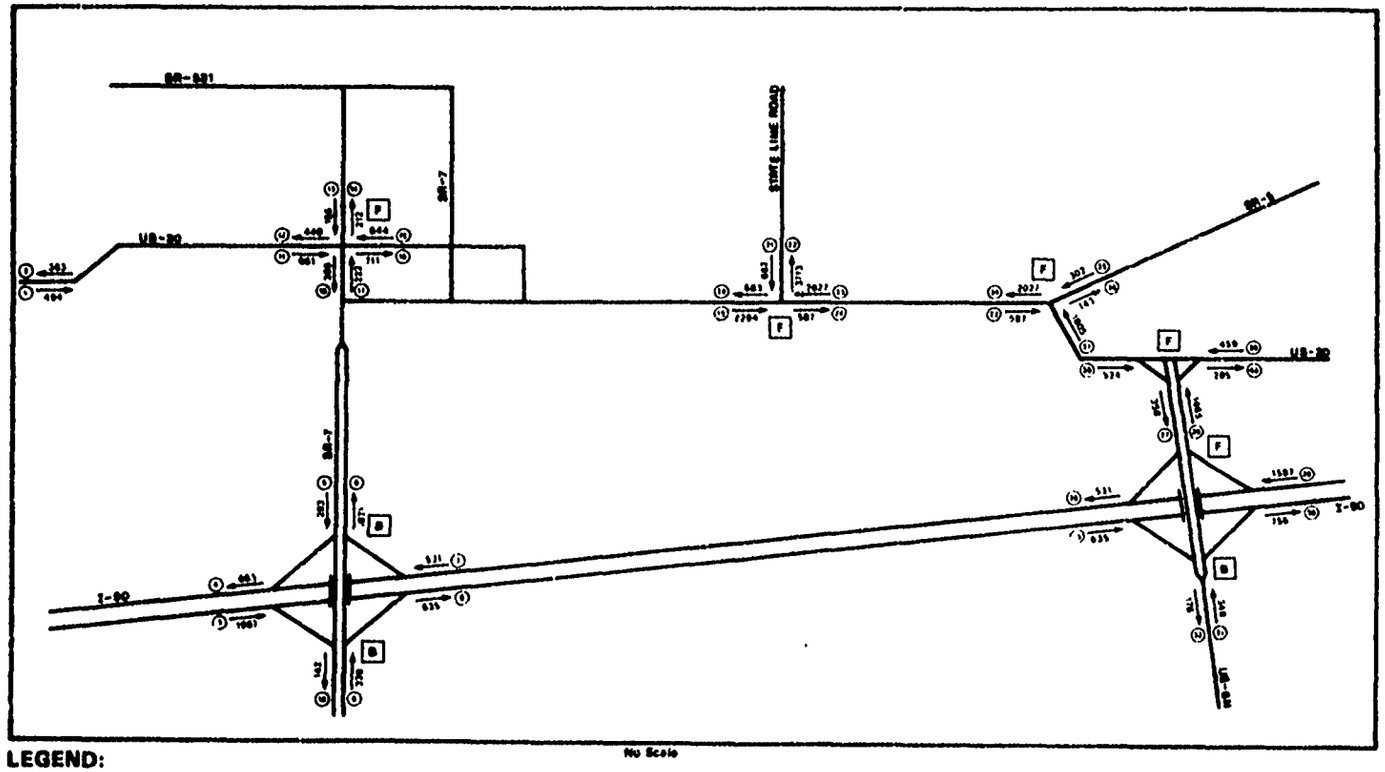
handling ability could be made without altering the basic configuration of the network, such as the addition of more traffic lanes. However, such improvements could result in unacceptable property acquisition and considerable cost.

6.281
Traffic flows and network operating conditions for 1985 are shown in Figure 6-15. As indicated, five key locations in the network, including the center of Conneaut, would still experience level of service F conditions. During this period, the proposed Lakefront plant would be operating three shifts, so incoming and departing traffic can be expected during the 7-8 a.m. shift change. Traffic flow conditions during Step II operations in 1990 are shown in Figure 6-16. From these data, it is apparent that three intersections will experience level of service F, including downtown Conneaut, and one intersection will be at level of service E. However, some improvements could be made at these locations to alleviate traffic problems, although property condemnation and associated costs could be expected to be a problem. In summary, it appears that the "no-build" alternative would result in undesirable traffic congestion problems during all three study years, with 1981 and 1985 being the most critical years during which a total breakdown in traffic flow would occur.

Noise Impacts Associated with Alternative Highway Network Plans

a. Predicted Noise Levels

6.282
The alignment of the Route 20 bypass has not been defined. For purposes of the traffic noise study only, it has been assumed that the route is located at 38 meters (124 feet) from Location 8 in order to assess the relative importance of the bypass and I-90 traffic to this location. In general, Location 8 could be considered representative of any remote location along the bypass that is also 335 meters (1,100 feet) from I-90. For the bypass alternative involving two access roads, Figure 6-17, the variation in the L10 noise levels is about three dB except for the east access, the bypass from State Line Road to SR-7, and SR-7 to I-90. The higher levels are due to the arrival of the construction workers in the morning on the east access road in 1981 and the 9 a.m. to 3 p.m. mill product truck traffic from the plant via the bypass to I-90 in 1990. Projected noise level ranges associated with this alternative are presented in Figure 6-17. The four-access road version of the bypass alternative exhibits noise levels which are not significantly different from the two-access road version. Due to the presence of overpasses and the two additional plant access roads, the levels on portions of Route 20 are altered slightly due to the redirection of the traffic on those portions. At Location 8, the roadside noise level is due to the predominant bypass



No Scale

LEGEND:

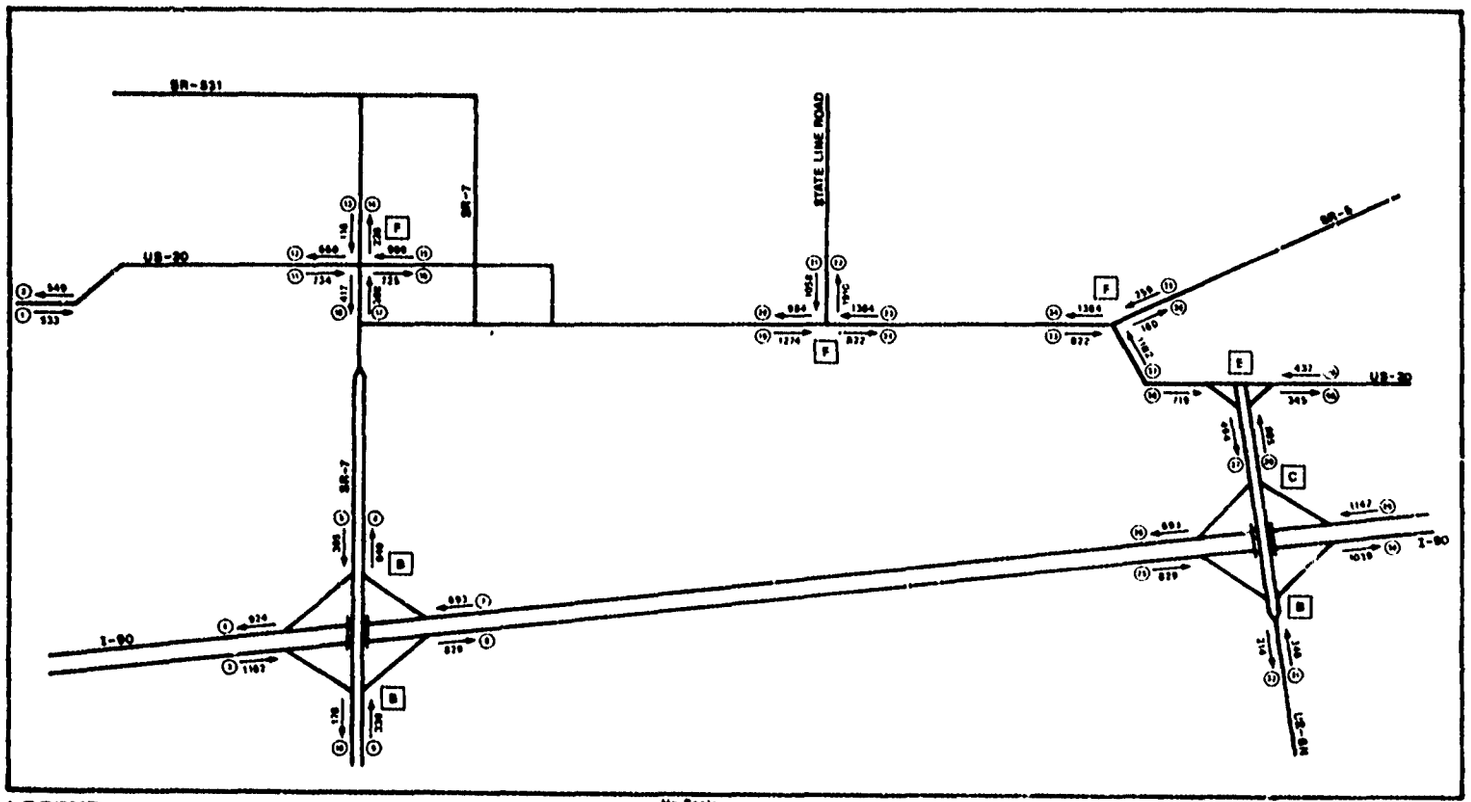
878 — Number of Vehicles

(6) — Appendix Table Location Reference Number

New Roadways

[F] — Level of Service

Figure 6-15 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1985 (NO HIGHWAY NETWORK IMPROVEMENTS)**



LEGEND:

- 878 → Number of Vehicles
- (6) Appendix Table Location Reference Number
- ——— New Roadways
- [F] Level of Service

Figure 6-16 **PROJECTED TRAFFIC FLOWS IN THE IMMEDIATE LAKEFRONT PLANT AREA, 7–8 AM – 1990 (NO HIGHWAY NETWORK IMPROVEMENTS)**

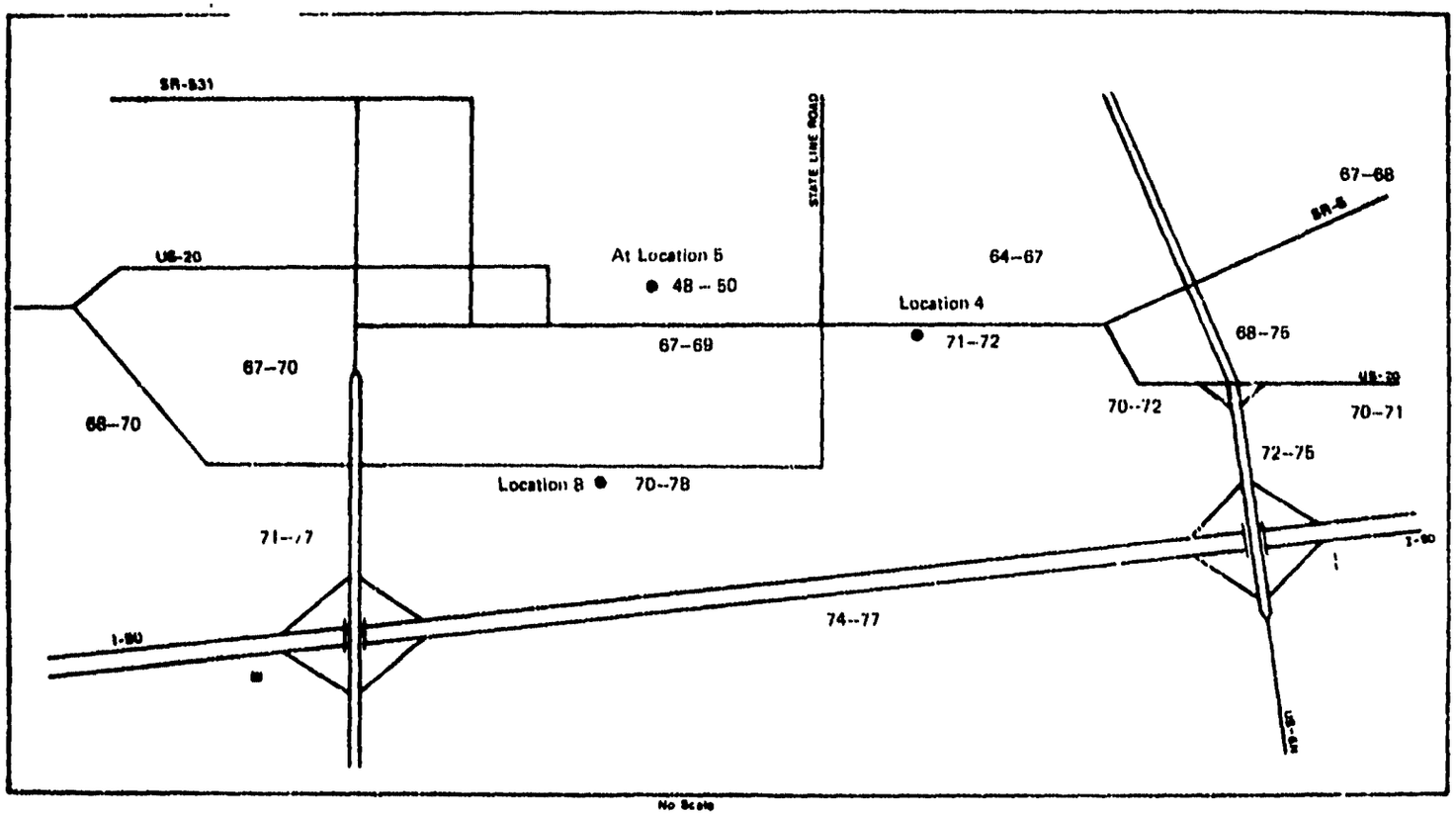


Figure 6-17 **RANGE OF VEHICULAR TRAFFIC NOISE LEVELS, L10 IN dBA, 7 AM-3 PM AT 30 M, (100 FT) FROM ROADWAY EDGE FOR ALL PROJECT YEARS; ROUTE 20 BYPASS WITH TWO ACCESS ROADS**

traffic. Realigning the bypass so as to eliminate the contribution of I-90 traffic noise would reduce this roadside level by one dB at most. Projected noise levels ranges associated with this alternative are shown in Figure 6-18.

6.283
If no highway improvements are made in the project area, the noise levels would be as shown in Figure 6-19. The most significant increases in noise levels would occur along Route 20 west of State Line Road and SR-7 since these roads would be the westward routes to I-90. The upper end of the ranges of noise levels for all roads, except SR-5 and U.S. 20 east of U.S. 6N, is due to produce truck traffic in 1990 during the 8 a.m. to 3 p.m. time of day. Although there are some minor exceptions during Step I, 7 to 8 a.m. construction worker commuting in 1981, the largest, long-term changes in traffic noise levels occur in 1990. The changes in the L10 noise levels for both the 7 to 8 a.m. and the 8 a.m. and 3 p.m. time periods have been combined to indicate the total range of noise level increases or decreases as compared to the baseline for the year 1990 as given in Figure 4-72.

6.284
The change in the L10 traffic noise levels due to the implementation of the Route 20 bypass alternative with two access roads is shown in Figure 6-20. To the east of State Line Road, the increases are a maximum of three dB. To the west, Route 20 and Location 5 experience a decrease in noise levels of two to four dB because the baseline traffic chooses the more convenient bypass route. Route SR-7 noise levels are increased by three to five dB while Location 8 experiences a larger increase of seven to 11 dB. These increases are due to the plant truck shipments. The bypass alternative with four access roads produces changes in noise levels that are substantially the same as with two access roads. As the results in Figure 6-21 indicate, the major difference between the two alternatives is associated with the routing of the traffic on certain portions of Route 20 near the access roads. If no highway improvements are made, the noise level increases over the baseline levels would be as shown in Figure 6-22. Route 20 west of State Line Road and Location 5 experience a significant increase of six dBA primarily due to the mill product shipments during midday. Route SR-7 would experience a corresponding seven dBA increase. The other increases east of State Line Road are minor. There is no change in noise level along I-90 between interchanges since the project traffic does not use this road link. Likewise, the noise level at Location 8 would not change.

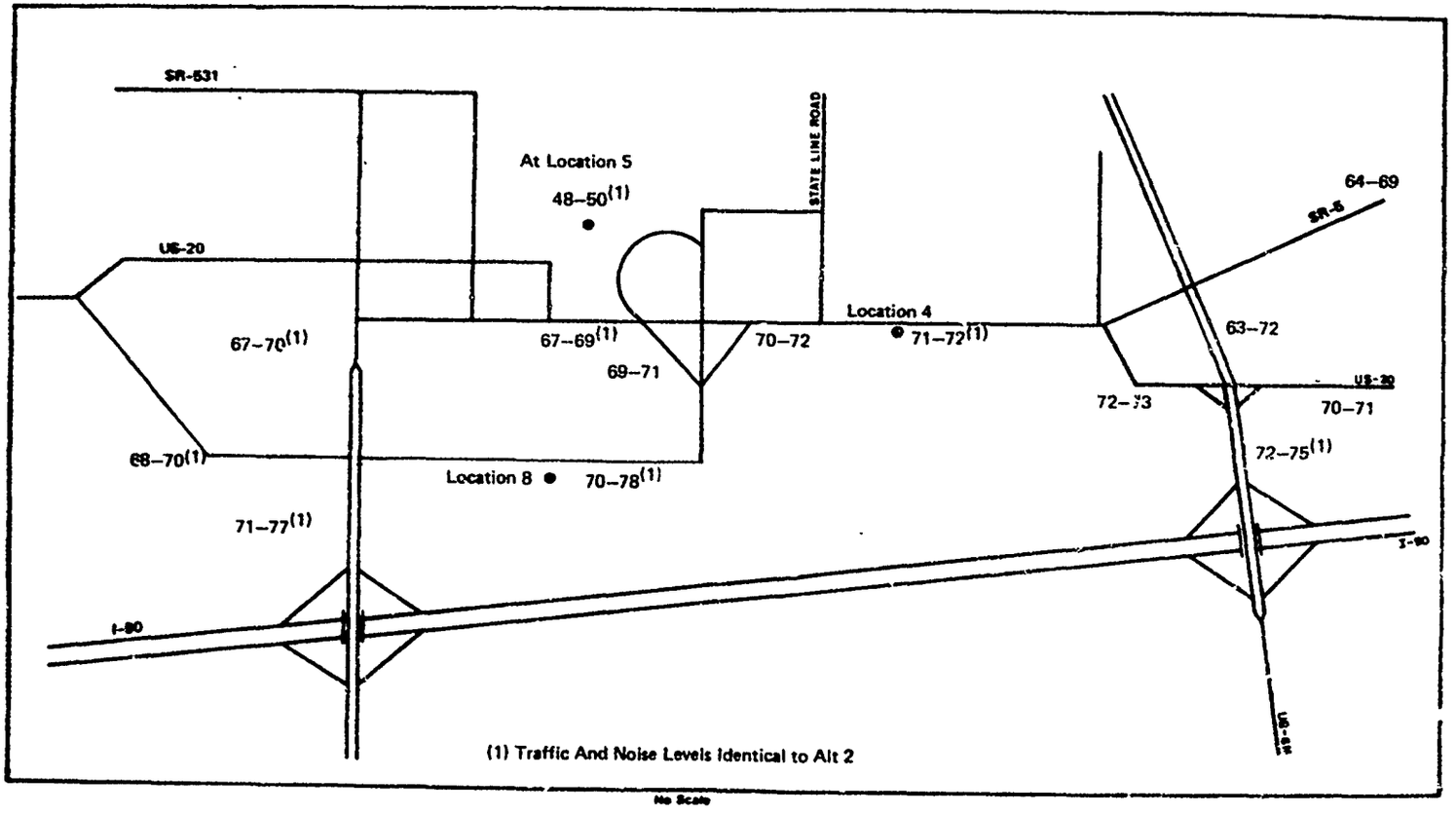


Figure 6-13 **RANGE OF VEHICULAR TRAFFIC NOISE LEVELS, L10 IN dBA, 7 AM-3 PM AT 30 M, (100 FT) FROM ROADWAY EDGE FOR ALL PROJECT YEARS; ROUTE 20 BYPASS WITH FOUR ACCESS ROADS**

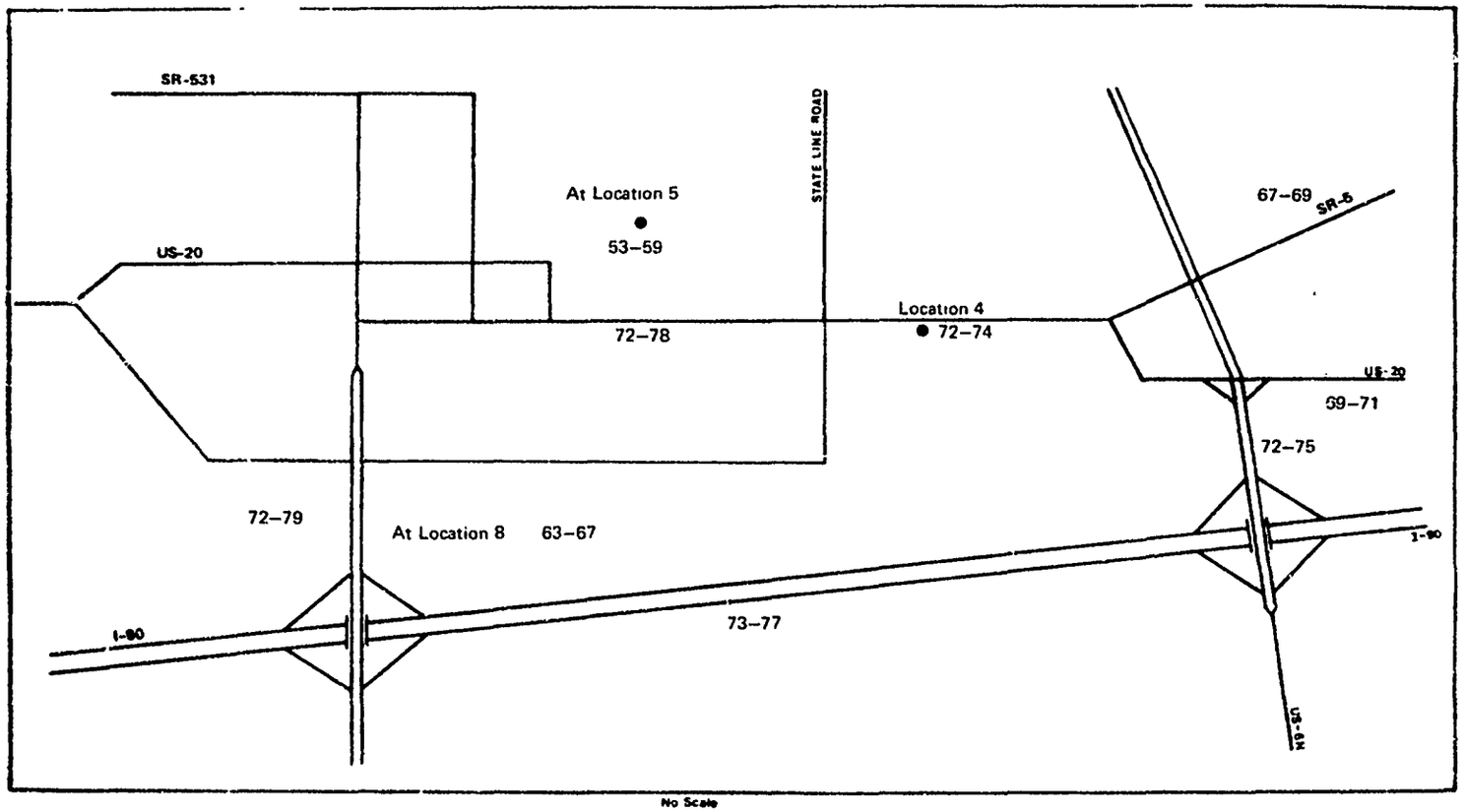


Figure 6-19 **RANGE OF VEHICULAR TRAFFIC NOISE LEVELS, L10 IN dBA, 7 AM-3 PM AT 30 M, (100 FT) FROM ROADWAY EDGE FOR ALL PROJECT YEARS; NO HIGHWAY IMPROVEMENTS**

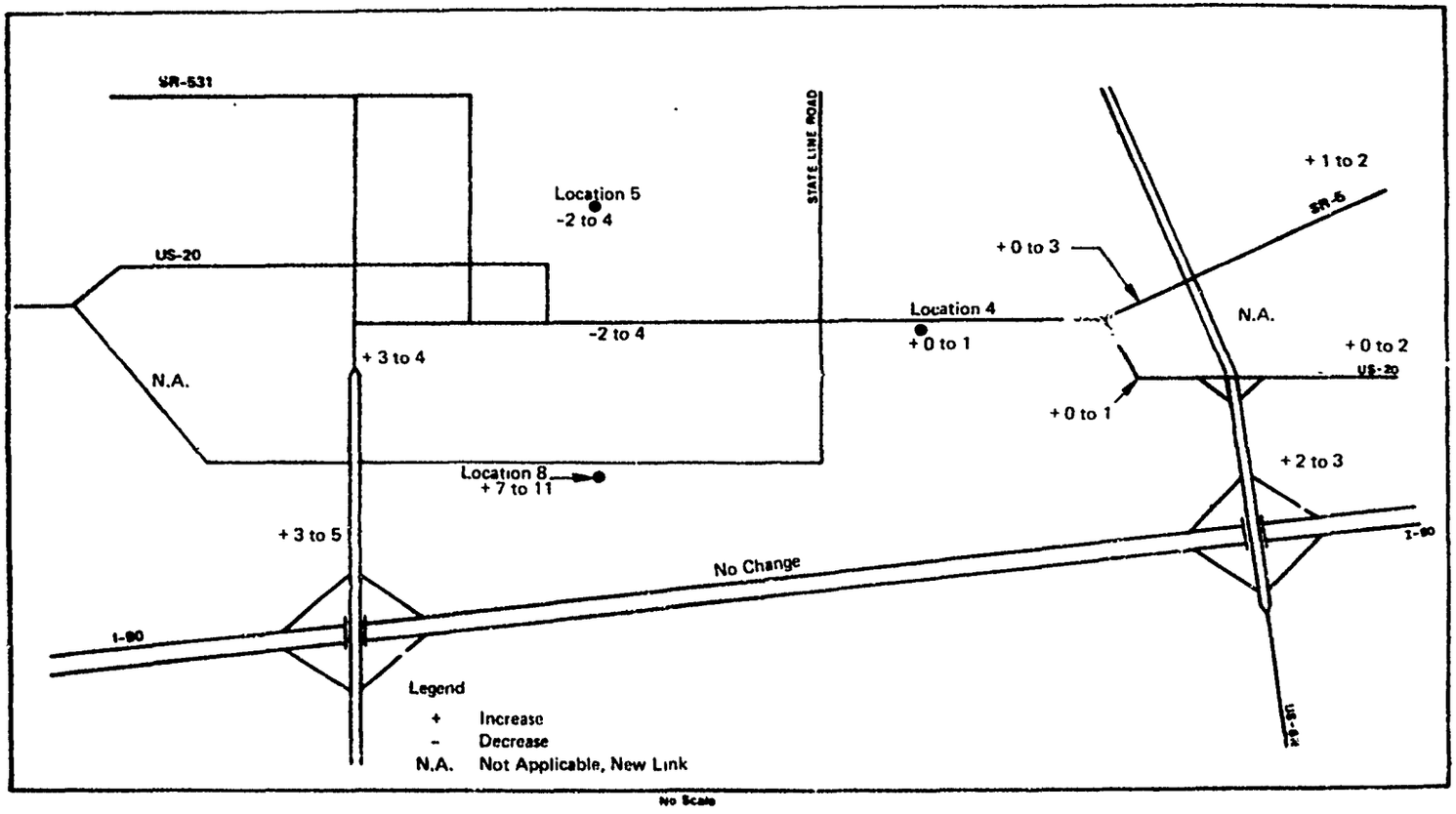


Figure 6-20 **CHANGE IN VEHICULAR TRAFFIC L10 NOISE LEVELS, dBA, 7AM-3PM; PROJECT COMPARED TO BASELINE FOR 1990; ROUTE 20 BYPASS WITH TWO ACCESS ROADS**

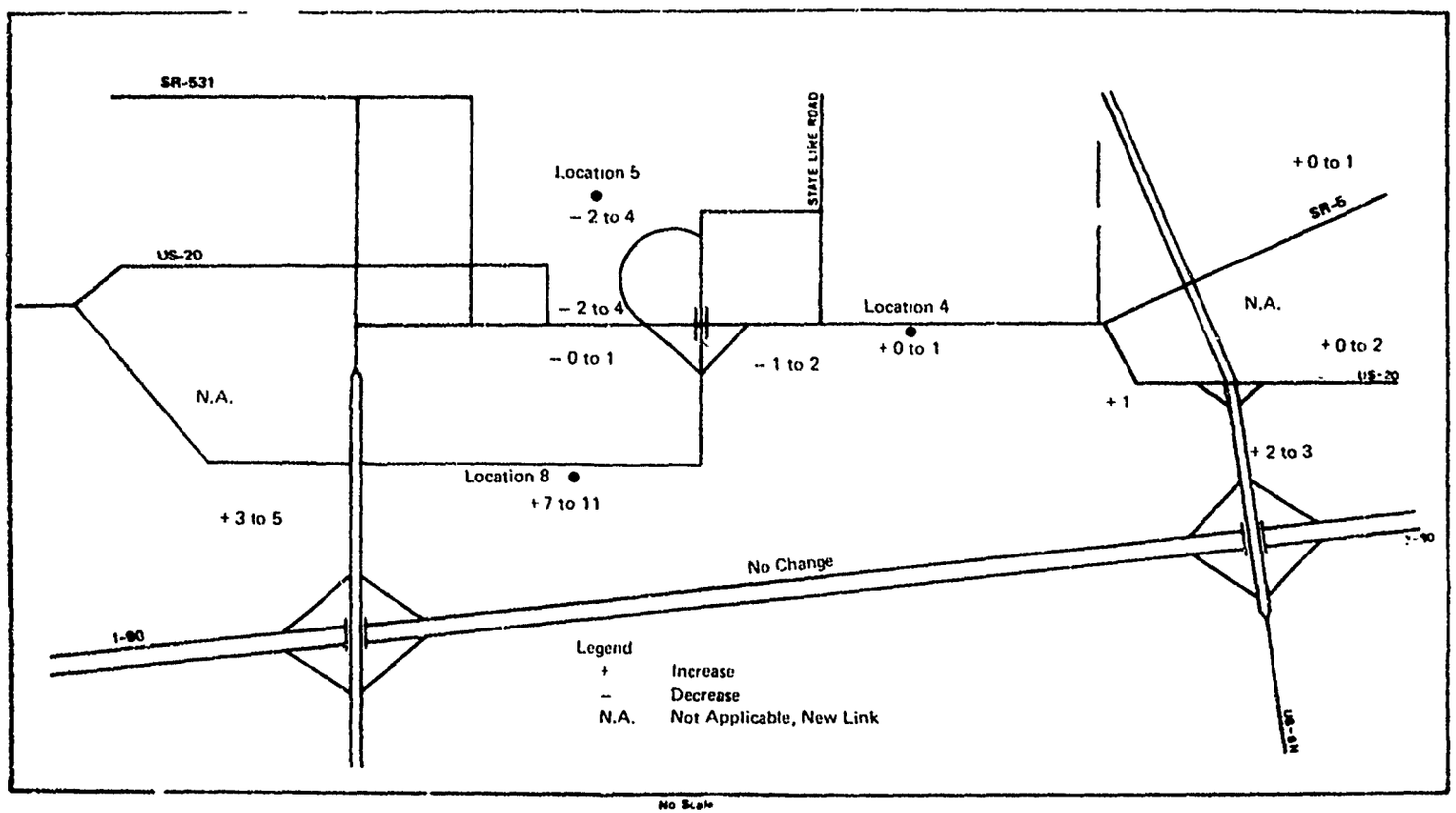


Figure 6-21 **CHANGE IN VEHICULAR TRAFFIC L10 NOISE LEVELS, dBA, 7 AM-3 PM; PROJECT COMPARED TO BASELINE FOR 1990; ROUTE 20 BYPASS WITH FOUR ACCESS ROADS**

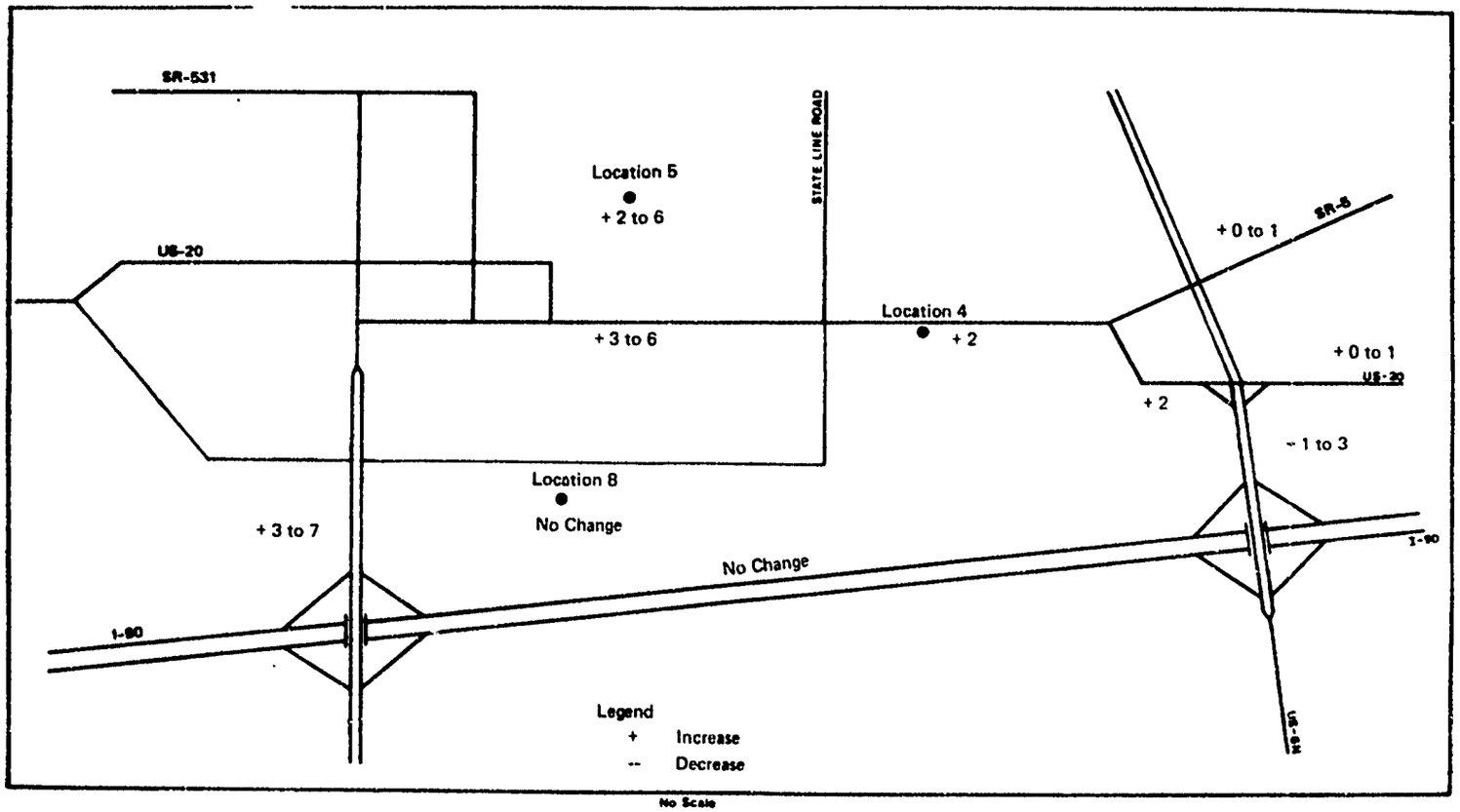


Figure 6-22 **CHANGE IN VEHICULAR TRAFFIC L10 NOISE LEVELS, dBA, 7 AM-3 PM; PROJECT COMPARED TO BASELINE FOR 1990; NO HIGHWAY IMPROVEMENTS**

b. Traffic Noise Impacts

6.285
Relative to the highway network in the project area and the Design Noise Level/Activity Relationships given in the FHWA Program Manual, 7-7-3, activity categories are assigned to the eight measurement locations. By application of the definitions of the various activities, Routes SR-7 and U.S. 6N are assigned the Activity Cateogy C, although no present activity exists. This information is summarized in Table 6-8 which also includes a comparison of the worst case predicted noise levels of Figures 6-17 through 6-19 with the Design Noise Levels of 7-7-3. Without road improvements, the design noise levels would be exceeded only for SR-7. This road link, however, has few residences within 150 meters (500 feet). Therefore, this alternative would have no measurable impact as long as future residential land development adjacent to this highway corridor is controlled. Either bypass alternative will cause an impact on Location 8 and other similar locations along the bypass alignment east of SR-7. The extent of this impact is dependent on the exact alignment of this bypass highway addition. Noise impacts may be experienced by residences where the bypass intersects with Furnace Road, Middle Road and Dorman Road east of SR-7 and Center Road, Blood Road, and other roads west of SR-7.

6.286
An alternative assessment of the traffic noise impact may be developed by referring to Figures 6-20 through 6-22. In these figures, the change in noise levels gives an indication of the potential reaction of roadside inhabitants For both bypass alternatives, the noise level increases along the bypass and SR-7 range from three to 11 dBA. For an average person, an increase of three dBA is just noticeable while 11 dBA increase is very significant, corresponding to an approximate doubling of subjective loudness. The advantage of the bypass alternatives is the slight reduction of levels on Route 20 west of State Line Road and within Conneaut. The increases in traffic noise levels, if no road improvements are made, are limited to a maximum of three dBA east of State Line Road. The impact here would be negligible. Routes U.S. 20 and SR-7 would experience increases of three to seven dBA, resulting in a modest impact. At Location 5, the Rowe School, it was noted earlier that the Route 20 traffic is now not a significant contributor to the local noise environment. Hence, it is concluded that the two to six dBA increase in traffic noise that would occur under this alternative would have negligible impact at this location.

Table 6-3

Comparison of Alternatives (Worst Cases) with Design Noise Levels
(LID, dBA)

Location and Description	Assigned Activity Category[1]	Design Noise Level (Hourly)[1]	Design Noise Level Exceeded? Bypass Two Access	Bypass Four Access	No Improvements
1. Park area, Elmwood Road	A	60	--- No project traffic ---		
2. Residential, SR-5	B	70	No	No	No
3. Developed, US 20 and 6N	C	75	No	No	No
4. Developed, US 20	C	75	No	No	No
5. Rowe School	B	70	No	No	No
6. Industrial, Conneaut	C	75	--- No project traffic ---		
7. Residential, Conneaut	B	70	--- No project traffic ---		
8. Residential, Dorman Road	B	70	Yes	Yes	No
State Route 7	C	75	Yes	Yes	Yes
US Route 6N	C	75	No	No	No

[1] U.S. Department of Transportation, "Federal-Aid Highway Program Manual," Volume 7, Chapter 7, Section 3, May 14, 1976.

SUMMARY

6.287
Alternative access and egress plans for the proposed Lakefront facility are only conceptual as far as this analysis is concerned. Should the proposed plant be built, detailed engineering and environmental studies will be undertaken by the Ohio Department of Transportation and the Federal Highway Administration. These studies will be used to identify the most practical access-egress scheme which would serve the needs of the community as well as the Lakefront plant.

ALTERNATIVE POLLUTION CONTROL FACILITIES

Air Pollution

6.288
The air emission control systems and procedures have been planned so that the emission limitations designated by the USEPA as BACT and LAER will be attained and satisfied. Inasmuch as these emissions limitations reflect by design the "Best Available Control Technology" or the "Lowest Achievable Emission Rate," the selected control practice is at the limit of current technology. Therefore, there are no valid alternatives, except in some cases where another piece of equipment of equivalent effectiveness could be substituted.

Wastewater Treatment Facilities

6.289
Each of the treatment facilities would be designed for the removal of specific constituents present in the particular wastewater stream. Constituents to be removed and the degree of removal required will be governed by the regulatory constraints stipulated in the actual discharge permit for the plant. The regulatory constraints largely determine the type of treatment required. For instance, cyanide is present in sufficient quantities in the wastewater from blast furnaces to require its removal, therefore, the proposed blast furnace wastewater treatment system includes alkaline chlorination for the destruction of cyanide. The waste constituents from continous casting operations that are subject to regulation are suspended solids and oil and grease, therefore, the proposed treatment system for the continuous caster includes sedimentation and filtration. In like manner, each of the wastewater treatment systems is designed for the removal of the specific constituents regulated. Since the regulatory constraints largely determine the type of treatment that must be applied, wastewater treatment alternatives are more in the form of variations in equipment and process configuration rather than in fundamentally different treatment concepts.

Coke Plant

6.290
The proposed treatment plant, based on activated sludge biological treatment (after ammonia stills), could be replaced by a system based on activated carbon absorption. It would not necessarily produce a higher quality effluent than the biological treatment system but might be less prone to upset conditions as sometimes encountered with biological treatment systems. Full-scale carbon treatment of total coke plant wastewaters has not been demonstrated in any plant thus, this alternative is somewhat uncertain and has not been proposed. Variations in the biological treatment process area are also possible. For example, if it is eventually required to control the discharge of nitrates (i.e., nitrates resulting from the oxidation of the ammonia discharged to the lake), then a biological treatment system could be employed that would first oxidize the ammonia to nitrate and reduce the nitrate to nitrogen gas which is then stripped from the wastewater. Although alternative processes such as biological treatment and ozonation could be used, the applicant does not consider these systems to be as effective as the proposed treatment system. Further, practical testing of these treatment methods have not been demonstrated on a scale which is compatible with the operating capacity of the proposed Lakefront plant.

Blast Furnace

6.291
The proposed blast furnace treatment system is quite extensive, consisting of alkaline chlorination for cyanide and ammonia destruction, clarification and filtration for suspended solids removal, and finally, activated carbon absorption for the further removal of organics.

Ozonation Versus Chlorination

6.292
If during operations it is determined that the formation of chlorinated hydrocarbons (from the chlorination of blast furnace and domestic sewage treatment systems) poses an unacceptable environmental threat, then the ozonation process could be used as a substitute for chlorination. Ozone will oxidize cyanides, phenols, polynuclear aromatics, and many other types of organic chemicals. At the present time, industry in the United States has had relatively little experience with ozonation, and full-scale installations employing ozone treatment of steelmaking wastewaters do not presently exist. In addition, ozonation has had the disadvantage of being relatively ineffective in the removal of ammonia.

Wastewater Equalization

6.293
The initial proposal for the plant involves combination of all of the (treated) process wastewaters from the plant, cooling tower blowdown, and roof runoff into a single discharge pipe which leads directly to an offshore submerged diffuser. While the effluents from individual waste treatment systems would incorporate some equalization, there is still the possibility of short-term abnormally high loads from one or more sources. One possible way of overcoming shock loads would be to use a final equalization lagoon. The present layout shows a series of such lagoons located between the hot strip mill and Lake Erie. It is common to size such lagoons so that their capacity is roughly equal to the volume of water discharged in one day, in this case, 266,400m^3. Abnormally high loads from one or more processes would be equalized (i.e., held up and mixed with more dilute wastewaters) in these lagoons, thus reducing the "worst case" effluent concentrations projected in Chapter Four of this statement. The applicant has agreed to use such facilities in the proposed Lakefront plant, although the exact location may be changed to reduce susceptibility to bluff erosion.

6.294
Another alternative which might be considered is to use once-through cooling water for the power plant noncontact water cooling system. This alternative offers the potential of decreasing the flow to the central wastewater treatment system by the quantity of the blowdown from the cooling tower circuit. In addition, the once-through cooling water would decrease the required cooling tower capacity. However, the total plant system intake would need to be increased to meet the full cooling water demand of the power plant, which is about three times the proposed raw water intake. Similarly, the total plant discharge would also be increased to dispose of the power plant cooling water which is almost four times the proposed total wastewater discharge. If once-through cooling were employed at the onsite power plant (instead of recirculation through cooling towers as planned), the volume of water discharged would be increased from 11,100 to 50,600 m^3/hr. However, the net load of contaminants added to the wastewater would remain unchanged, so the concentrations of plant-generated contaminants in the wastewater would be reduced by about roughly 25 percent. Correspondingly, the concentration of constituents would be reduced in the vicinity of the discharge. The use of once-through cooling at the power plant would result in more waste heat discharged to the lake. This would be distributed over a larger area by increasing the number of discharge ports to 12 versus the four ports of the proposed discharge structure. Otherwise, the diffuser would be identical as the one proposed for the Lakefront facility.

6.295
Eight lake dispersion case studies have been modeled for this alternative water system and discharge configuration. The significant parameters for these cases are shown in Table 6-9. Two cases for each of the lake seasons were selected from data representing the months of February, early June, August, and October. The power plant would require 160,000 gpm with a condenser temperature rise of 18.3°F. If this volume of water were mixed with the 45,000 gpm of the Lakefront plant effluent, resultant temperature is generally lower than the temperature of the 11,000 m^3/hr effluent of the proposed system. Only during August is the temperature of the once-through system (34.4°C) greater than that of the proposed system (32.6°C). In all eight cases studied for once-through cooling, it is predicted by the model that Ohio standards for temperature increment are met with considerable margin of safety. For example, the maximum temperature increase at 800 feet from the outfall is 0.7°C during June while temperature increases of greater than 1°C are predicted to be confined to areas within 150 feet of the outfall. The principal difference between the alternative "once-through" plume and the plume generated by the proposed facility is that it encompasses a much broader area. A larger volume of water would experience elevated temperatures and discharge constituent concentrations. However, the temperature increase remains roughly the same while maximum concentrations of other parameters are significantly reduced. As indicated in Table 6-10, this alternative system would cause constituent concentrations at 800 feet from outfall to meet Ohio standards for all parameters under typical operating conditions.

6.296
The most significant potential environmental hazard associated with the once-through cooling alternative is the greater volume of intake flow required: 53,800 m^3/hr for once-through cooling vs. 14,300 m^3/hr with recirculation. A larger intake would have to be installed to accommodate the greater volume of water needed for once-through cooling operations. The increased volume and subsequent changes in intake velocity could cause greater losses due to entrainment and impingement of fish species than the structure currently proposed for the Lakefront facility.

ALTERNATIVE SOLID WASTE MANAGEMENT SYSTEMS

6.297
Extensive resource recovery of residuals generated from iron and steel production is planned as part of the proposed Lakefront plant. Ninety-six percent of the residuals are expected to be recovered, leaving only four percent to be disposed by sanitary landfill or alternately handled. Onsite disposal is proposed because of the lack of known adequate waste management facilities within the Regional

Table 6-9

ENVIRONMENTAL CHARACTERISTICS OF SELECTED DISPERSION MODEL CASE STUDIES FOR ONCE-THROUGH COOLING

Case No.	Month	Ambient Temp. (°C)	Effluent Flow Rate (kgpm)	Depth of Outfall (m)	Distance Offshore (m)	Effluent Temp. (°C)	Current Speed (cm/sec)
9-1	February	0.6	205	10	1750	16.1	1.5
-2		0.6	205	10	1750	16.1	30
10-1	June	13.2-13.6	205	10	1750	25.3	1.5
-2		13.2-13.6	205	10	1750	25.3	45
11-1	August	24.3	205	10	1750	34.4	1.5
-2		24.3	205	10	1750	34.4	45
12-1	October	14.1	205	10	1750	22.4	1.5
-2		14.1	205	10	1750	22.4	45

Effluent temperatures are the maximum temperatures projected for the once-through cooling alternative in the corresponding season.

Source: Arthur D Little, Inc. estimates based on historical temperature and current data for Lake Erie.

Table 6-19

EFFECTS ON WATER QUALITY OF ONCE-THROUGH COOLING AT POWER PLANT

Constituent	With Once-Through Cooling: Effluent Concentration Typical	Effluent Concentration Worst	Concentration at 800 feet from Outfall Typical	Concentration at 800 feet from Outfall Worst	Expected Ohio Standard	Without Once-Through Cooling: Concentration at 800 feet from Outfall Typical	Concentration at 800 feet from Outfall Worst
Ammonia	0.24	0.91	0.05	0.34	1.5	0.073	0.46
Arsenic	0.0014	0.006	0.001	0.005	0.05	0.001	0.005
Cadmium	0.0008	0.0054	0.001	0.005	0.0012	0.001	0.005
Chromium	0.009	0.022	0.005	0.011	0.005	0.007	0.013
Cyanide (Total)	0.029	0.084	0.0014	0.0057	0.025	0.005	0.023
Cyanide (A)	0.004	0.012	0.0004	0.001	0.005	0.0008	0.004
Fluoride	0.44	1.118	0.14	0.25	1.8	0.8	0.46
Iron (dissolved)	0.20	0.50	0.06	0.12	1.0(1)	0.07	0.2
Lead	0.014	0.026	0.005	0.011	0.03	0.006	0.014
Manganese	0.05	1.0	0.01	0.02	0.05	0.017	0.04
Oil and Grease	1.35	6.27	1.0	5.1	5.0	1.1	5.3
Phenols	0.008	0.024	0.0009	0.004	0.001	0.0018	0.009
Total dissolved solids	280	380	200	260	200	210	290
Zinc	0.022	0.077	0.02	0.07	0.03	0.02	0.07

All concentrations in mg/l: all paramaters are "total" unless otherwise specified.

(1) Standard is for total iron.

Source: Arthur D. Little, Inc., estimates based on information supplied by United States Steel Corporation and data collected from Lake Erie.

Study area. If an adequate commercial sanitary landfill is developed offsite, it may be used as an alternative to onsite disposal of the wastes considered nonhazardous. Similarly, if a suitable commercial hazardous waste facility were to be developed offsite, it could also be used as an alternative disposal area for the certain hazardous plant wastes. In either case, transport, handling, and disposal would be subject to Ohio and Pennsylvania solid waste regulations.

6.298
Land spreading and incineration are normally alternatives to landfill for wastes containing organics. However, only a small portion of the projected wastes have significant amount of organics. For example, the oily sludges from the hot strip mill, plate mill, and wastewater treatment operations comprise less than nine percent of the residuals disposal or alternative management. The metals fraction of the oily sludges is too significant to consider land spreading as a viable alternative. Although biodegradation of most of the organics (which comprise less than 10 percent of the total weight of the oily sludges) would probably occur within several years, substantial amounts of metal fines remaining would create potential for adverse groundwater quality, terrestrial biota, and surface water quality impacts. However, incineration of the oily mill sludges would be technically feasible. The combustibles in general plant refuse comprise less than four percent of the plant residuals requiring waste management. Although incineration of this refuse is possible from a technical standpoint, the quantities (less than 20 tons/day) may not be large enough to justify a separate facility. In the event a municipal refuse incinerator or resource recovery plant is established in the Regional Study Area, the combustion portion of the refuse from the Lakefront plant could be handled offsite.

6.299
Although the level of resource recovery estimated for the proposed Lakefront plant is substantial, additional recovery of certain residuals may be possible in the future. Specifically, markets for ash from the power plant include manufacture of cement and concrete, light aggregate for construction, filler (and antiskid additive) for asphalt, landfill cover, extraction of mineral values, blasting (abrasion) compound, and soil amendment. Although no markets for flue gas desulfurization sludge currently exist, potential uses include manufacture of cement and concrete, wallboard production, and soil amendment. Additional resource recovery beyond what is already planned could provide alternative solid waste management for about 50 percent of the residuals currently planned to be disposed by sanitary landfill. However, resource recovery will only advance beyond projected levels if markets do, in fact, develop in the future.

ALTERNATIVE OPERATION AND MAINTENANCE METHODOLOGIES

Operations

6.300
The operation methodologies for the proposed plant are governed by process technology and environmental controls for each process step. To optimize plant performance and production critical process steps which control either directly or indirectly upstream and downstream operations are managed by real time computers. Selection of process methodologies for the proposed Lakefront plant was accomplished by the applicant during the successive evaluation of a number of promising alternative procedures. No additional data were provided on the systems evaluated or the criteria used to evaluate them.

Maintenance

6.301
The high production rate planned for the proposed plant is critically dependent upon the full-time availability of process equipment. For this reason, consideration of maintenance methods has been incorporated in the development process operating methods and environmental control procedures. Hence, the selected methods of maintenance have been evaluated as a key element of process planning and no other alternative methods of maintenance are under consideration by the applicant at this time.

ALTERNATIVE INTAKE AND DISCHARGE SYSTEMS

Intake

Intake Siting and Design

6.302
The data presented earlier in this environmental impact statement indicate that entrainment rates for certain species of Lake Erie fish are high. To alleviate this adverse environmental impact, the intake could be moved further offshore so that areas with high ichthyoplankton densities are avoided. In addition, the intake could be redesigned to change the intake velocity.

6.303
Since entrainment and impingement impacts are primary factors considered when evaluating intake/discharge systems (operational phase), EPA has informed the applicant that additional ichthyoplankton studies would be required prior to final decisions on the NPDES permit application. Study results will help determine the optimum

placement of the structures. The applicant has agreed to perform additional sampling as requested by the USEPA.

6.304
It should be noted that intake-discharge systems involve two authorization processes; a Department of the Army permit (D of A) for structure installation and an NPDES permit which authorizes the operation of these structures. A Department of the Army permit, if issued, would not authorize operation of the circulating water system but rather would authorize only construction of the intake, discharge, and associated pipelines. Therefore, if a D of A permit is granted and a NPDES permit is issued later requiring the placement of structures in an area other than where the D of A permit authorized construction, a review and revision of Corps authorization would be required. Construction-related impacts associated with intake structure installation along the proposed transect have been addressed and determined acceptable, however, if a minor change is necessary, options are available to the District Engineer to incorporate appropriate modifications in the D of A permit.

6.305
Alternative discharge system designs were compared and assessed on the basis of engineering feasibility, environmental impact, and economics. All of the methods considered centered around the requirement that the plant effluents be discharged to a receiving waterbody. Since the applicant has selected the submerged diffuser system, several alternative design parameters were evaluated as follows:

The choice of number of ports and port orientation is a complex problem which must be solved on a case-by-case basis. Local flow conditions, stratification, and bottom topography are the most important environmental conditions which must be considered. In this case, the prevailing flow is the major consideration for determination of proper port geometry. Best dilution is expected when the prevailing current direction is the same as the effluent direction. When local currents are counter (WSW) or cross flowing (onshore, offshore) to the induced flow, the dilution is likely to be slightly reduced by remixing as the plumes turn back on themselves or interact with one another. However, the largest ambient currents will be 1.0-1.5 feet per second and typical current speeds are 0.3-0.7 feet per second. When compared with effluent velocities of 13-16 feet per second, it is evident that the ambient currents will have little influence on plume behavior until substantial dilution has been achieved.

Computer modeling studies have shown that better mixing zone dilution is achieved with a horizontal discharge. The major potential disadvantage of a horizontal discharge is the tendency

for the effluent to remain near the bottom of the lake, a zone of relative high biological activity. This tendency is reinforced when the waters of the lake are thermally stratified. Since there is an apparent lack of any substantial stratification at the site of the proposed discharge, the buoyant effluent will generally (over 95 percent of the time) rise to the lake surface. Thus, a horizontal discharge is proposed because of its superior dilution characteristics.

The 33-foot distance between ports, has been chosen to allow adequate dilution prior to plume interaction while limiting the area within the mixing zone which might be contaminated by the effluent. If the ports were further apart, greater dilution could be achieved under the prevailing ENE currents, but increased concentrations at the edge of the mixing zone would result during onshore or offshore flow. Since onshore flow conditions may be most important in terms of environmental impact, the proposed port separation is a considered reasonable choice.

Placement of Discharge Farther Offshore

6.306
Improved initial dilution of the discharged effluent could be achieved by extending the discharge pipe further into Lake Erie. However, computer modeling studies predict that the incremental improvement of water quality parameters for a deeper discharge is very small. If the discharge were further offshore, the water quality of the shoreline areas would be improved. However, the analysis indicates that the location chosen does not result in severely degraded water quality at the shoreline, so the benefits would be slight. Furthermore, the impacts of additional underwater laying of pipes would be increased by extending the discharge further from shore. If the discharge were located below the lake thermocline, it is possible that the discharge would remain trapped at this depth. Although this may enhance the aesthetic perception of the effluent discharge, it reduces the opportunity for dilution because of the relatively stagnant conditions below the thermocline. Another effect of moving the discharge offshore is the increased probability that the constituents released would remain in Lake Erie central basin which experiences dissolved oxygen depletion each summer. This appears to be a strong possibility with a deeper discharge, as sampling by the United States Fish and Wildlife Service in 1977 showed periodic benthic oxygen depletion and thermal stratification at depths equal to or greater than 40 feet in this basin. A deeper discharge could contribute to that problem, but, would be less likely to affect the eastern basin.

Placement of Discharge Farther East

6.307
If further studies show a large semi-permanent current eddy this far to the east of the Conneaut Harbor breakwater, the environmental impact of the main discharge might be reduced by locating the discharge further to the east away from the influence of the eddy which would tend to trap discharged material, especially suspended solids, near the breakwater. However, relocating the discharge further to the east would bring it closer to the public beach at the mouth of Raccoon Creek, thus increasing the possibility of adverse water quality impacts and subsequent decline of water contact recreation.

Surface Discharge vs. Submerged Discharge

6.308
One alternative design the applicant considered is a surface discharge which would involve the construction of a canal from the shoreline to some point offshore. Surface discharges are often used in situations where benthic life must be protected from higher ambient temperatures. The buoyant heated water stays at the surface, spreads over a large area, and its temperature is reduced through the loss of heat to the atmosphere as well as by dilution. Generally, the effluent exit velocity is much less than that of the proposed submerged diffuser, thus dilution by induced turbulence is much less effective than would be the case from the proposed discharge. The reduced dilution capability of a low-velocity surface discharge is its most serious drawback for the present application. Environmental impacts will be more severe during periods of low-to-moderate onshore winds since the surface plume will be directed towards the shoreline. The proposed submerged discharge will reduce this problem considerably. In addition, the discharge canal would require the permanent commitment of benthic habitat, impede the movement of small craft along the shoreline, and aggravate shore erosion downcurrent of the structure.

Alternative Diffuser Geometries

The multiport diffuser is superior to the single port outfall since it affords a greater degree of dilution capability.

Increased Spacing Between Outlet Ports

6.309
For certain combinations of environmental conditions, notably during the summer and fall, increased spacing between outlet ports would lead to improved dilution of the discharge. However, when effluent

temperatures are high relative to the lake temperatures (worst case conditions), increased port spacing would not lead to a significant change in predicted dilution. Therefore, the applicant has not considered the alternative of increased port spacing any further.

ALTERNATIVES TO THE ORIGINALLY PROPOSED FILLING AND DIVERSION OF TURKEY CREEK

6.310
One alternative to the originally proposed diversion of Turkey Creek for consideration by the U.S. Steel Corp. at a series of Corps public hearings in June 1977, would involve the relocation of the lower portion of Turkey Creek to the eastern portion of the site. Although this plan would afford a similar interface with Lake Erie, the degree of ecological success is dependent on a number of factors including reestablishment of riparian vegetation, flow fluctuations, erosion, and siltation. A second alternative proposed by several review agencies, including the U.S. Fish and Wildlife Service, would involve setback of plant structures and support from Turkey Creek. This second alternative is considered to have less adverse impact potential in terms of aquatic biota than the original diversion channel proposal or the relocation alternative. However, setback of structures from the uncovered stream would not guarantee that Ohio instream water quality standards would be met in the lower reach of Turkey Creek. Water quality could be affected by surface runoff, deposition of airborne particulates, and spillage at bridge and conveyor belt crossings. Recognizing the adverse impacts associated with the original proposal and the uncertain chances of success for the above two alternatives, the applicant has adopted a new plan which calls for culverting a portion of Turkey Creek and eliminating the diversion channel. The current proposal is discussed in paragraphs 1.349d through 1.349h of this Final EIS; and the impacts of the culverting may be found in the terrestrial ecology, recreation, aquatic ecology, and water quality sections of Chapter Four.

Relocation of Turkey Creek

6.311
This alternative involves the relocation of the confluence of Turkey Creek with Lake Erie approximately 2.2 miles east of its present location. The plan would involve the construction of a new stream channel between Lake Erie and the existing Turkey Creek approximately 1,600 feet north of the intersection of Rudd Road and the Conrail tracks. In general, the channel would meander in a north-northeasterly direction and would have a total stream length of about 16,000 feet. The applicant originally intended to fill approximately 33,000 feet of continuous flow streambed in Turkey Creek, thus the

relocation scheme is an attempt to compensate in part for the loss of stream channel and aquatic habitat. The Turkey Creek relocation scheme is shown in Figure 6-23. Detailed design specifications for such a relocation were not provided by the applicant.

6.312
To effect the relocation of Turkey Creek and assess environmental impacts associated with such a scheme, certain assumptions must be made. These are briefly summarized below:

- The lower portion of the existing creek would be drained during late Winter or Spring 1979 so that filling can be accomplished.

- The new channel for the mainstem of Turkey Creek would be completed before high spring flow conditions in 1980.

- Grading for construction of the mill and support facilities would alter surface drainage patterns in such a way that flow is directed away from the relocated streambed.

6.313
Under worst cast conditions in which no protective measures are implemented along the new reach of Turkey Creek, the channel would largely resemble the proposed diversion ditch along the Conrail tracts. Initially, the lower biotic productivity expected in the originally proposed diversion channel would also occur in the relocated Turkey Creek channel. The newly cut streambed would not have the same stable banks as the original creek channel. Therefore, unless extensively stabilized, the banks of the new channel could be easily eroded adding inorganic material to the creekbed. This input along with the resuspension of bottom materials that would occur as the streambed reaches equilibrium could effectively cover sand and gravel habitat that may be present. Unless controlled, high flows during periods of heavy precipitation could scour out strategically located pool and riffle areas. The new creek channel would also lack the riparian shade cover and instream cover that presently exists in Turkey Creek.

6.314
The initial increases in siltaceous material, loss of riparian cover, and the absence of established populations would be inherent to the construction of a new streambed and as such are largely unavoidable. The ultimate goal of this relocation scheme would be to establish a new creekbed with the same ecological characteristics as the original Turkey Creek despite the initial adverse impacts. Absence of

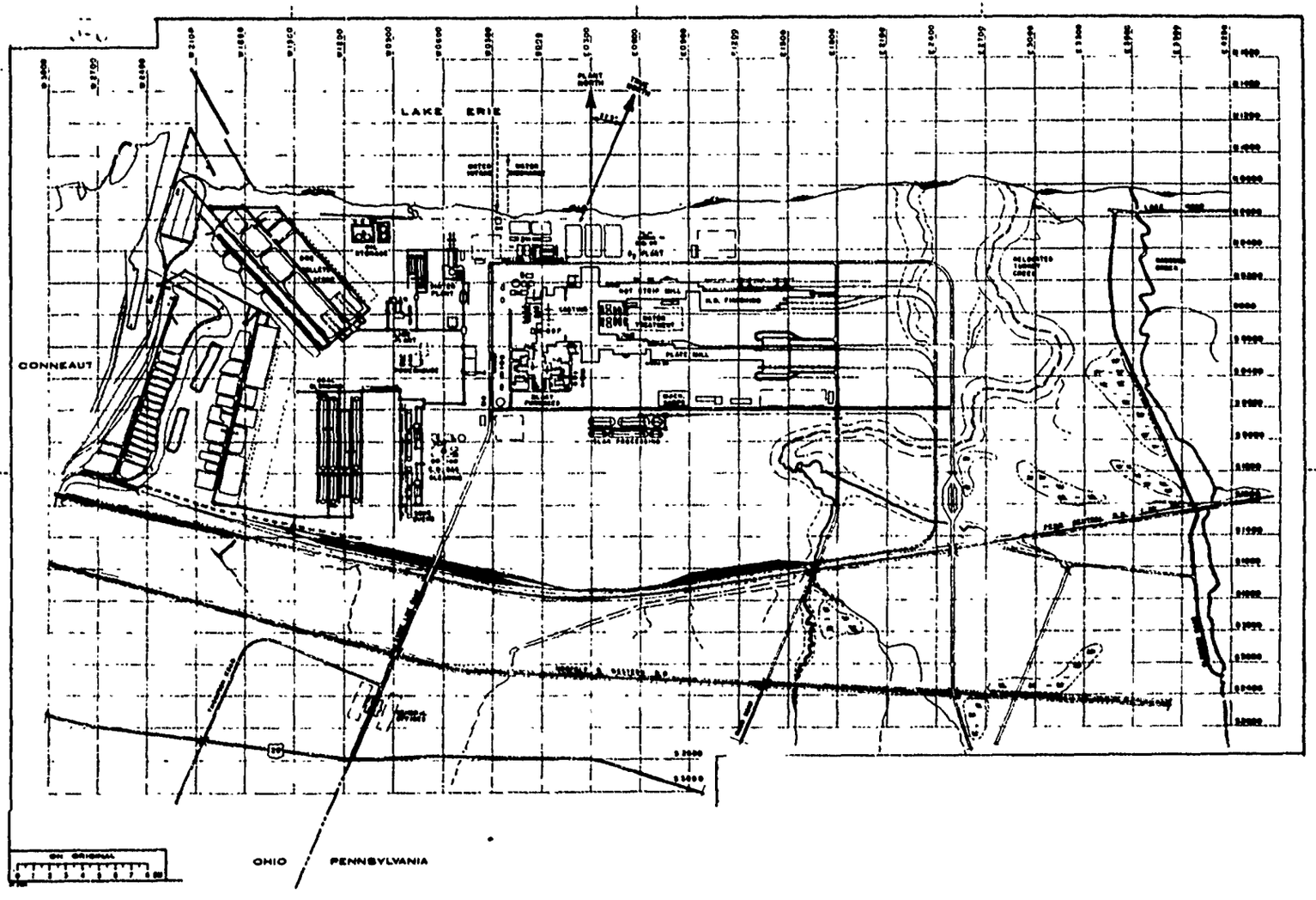


Figure 6-23 **TURKEY CREEK RELOCATION SCHEME**

applicable data makes realistic predictions regarding successful stream establishment very difficult. For example, many of the existing studies on stream channelization or siltation effects are for watercourses which are markedly different than Turkey Creek. The potential problems associated with the relocation and reestablishment of a new Turkey Creek are presented below.

Riparian Habitat

6.315
Once the new creek channel would be constructed, the banks would have to be revegetated as quickly as possible to minimize erosion and runoff effects. If such action was not taken, the channel waters would exhibit elevated temperatures over a long period of time. Similarly, if the channel excavation work was not conducted properly and topsoil was permanently removed, then plant succession would proceed very slowly. Over the course of time, these problems could be circumvented by the selective planting of indigenous fast-growing species such as alder and willow and much slower growing species such as the red maple. As the overstory and understory canopy develops, rapid temperature fluctuations would diminish and cover for fin fish species would increase. The establishment of vegetative cover would provide a source of detrital material and nutrients through the decomposition of leaf litter.

Benthos

6.316
Erosion of newly cut streambanks would occur unless they were revegetated or otherwise protected. Until the channel reached equilibrium unstable bottom conditions would persist which would limit establishment of a diverse population of benthic macroinvertebrates. The repopulation of benthic organisms would probably occur as individuals enter the new streambed from parts of the Turkey Creek watershed south of the Lakefront site. In addition, egglaying by winged adults would contribute to the repopulation effort. However, suitable substrate would be required to insure successful recolonization as well as continuous flow conditions.

6.317
Rapid reestablishment of benthic populations in channelized and heavily silted streams has been illustrated where substrate material consisted of larger rubble and rocks (representing fairly stable habitat). Conversely, channelized portions of streams with heavy siltation and shifting, unstable bottoms supported only severely depauperated benthic fauna. Benthos restricted to riprap and bridge abutments or obstructions in streams, where unstable shifting bottoms exist as a result of channelization, has been frequently observed

even in channelized areas 30-50 years old. (6-1,2,3,4,5,6,7) These studies indicate that substrate stabilization is necessary before repopulation by benthic invertebrates can occur.

6.318
For example, Sampling Station TC-4 appears to have received heavy siltation, possibly from road and railroad construction as well as land clearing associated with neighboring agricultural activities. This short, low gradient stretch of Turkey Creek exhibits a packed silt and sand substrate unlike the clay and tills strewn with rock rubble in many other undisturbed reaches. During the Spring of 1977, samples taken by Aquatic Ecology Associates indicated that species diversity was lower at TC-4 than at downstream stations with Simulium sp. (black flies) and Hydropsyche sp. (caddis flies) most prevalent.

6.319
Careful engineering to achieve pool and riffle frequency similar to the existing creek might increase the possibility of success in replication or improvement of the lost Turkey Creek habitat. Streambank deflectors, properly engineered to reduce the possibility of additional downstream erosion and/or large boulders, have been utilized to increase deep pool habitat in small streams (6-8,9,10,11) Large boulders and loose rubble (the latter in riffle areas) would also improve the possibility of creating a diverse benthic fauna in the Turkey Creek relocation. The boulders and rubble might be obtained, at least in part, from excess fill material remaining from intake/outfall pipelaying activities in Lake Erie. If such material were utilized, placement in the new creekbed prior to opening the new creek would be optimal. Ideally, banks should be stabilized, gravel and boulders placed before spring high flows and prior to the opening of the new creek channel. Then, the increased spring flow could clear some silt from rubble interstices, carrying some loose material downstream and initiating the intended deepening of pool areas. Agency representatives reviewing this proposal have indicated that the flushing action associated with spring runoff should be maintained throughout the year to augment creek flow. This could be accomplished by collecting uncontaminated runoff in a holding pond near the upstream portion fo the creek and releasing it into the new channel on a periodic basis or utilizing a portion of the untreated plant intake water for low flow augmentation. The use of runoff would only be practical if sufficient quantities of high quality water were available.

Fish

6.320
Where stream channelization has been accomplished in such a manner that straightened raceways with even depth and width are produced,

fish productivity has been greatly reduced. Substrate diversity as well as sufficient percentages of pools and riffles can allow for spawning habitat for a wide variety of stream and anadromous species. Cover, in terms of overhanging banks, large rocks or boulders, and brush can increase the holding capacity of streams, especially for game fishes such as trout and bass. (6-1,2,4,5,6,7,12,13,14) Thus, the measure described previously for benthos also applies to the establishment of fishery habitat. In addition, some cleared trees from the site could be utilized for instream brush or for the construction of stream deflectors. Forage species including the creek chub and certain predatory species such as the sunfish (Lepomis) could be the first species to utilize the channel. The literature indicates that where pool populations of fishes were decimated (except for some forage species), Lepomis megalotis populations returned to normal levels within one year. This was attributed to contributions from upstream populations. Other predatory fishes did not return to normal numbers during this time and the new population of sunfishes was observed to contain larger individuals. (6-15)

6.321
In general, game fish species are only temporary residents in Lake Erie tributaries such as Turkey Creek. It is possible that the white sucker and other anadromous species from Lake Erie might use the relocated channel for spawning runs, but the success of such activities would be dependent on substrate availability and water quality. Until the relocated creek were stabilized, it is likely that such species would migrate beyond the new channel reach to undisturbed areas in the upper watershed.

6.322
Northern pike (Esox lucius) were collected in the areas near the mouth of existing Turkey Creek in early Spring of 1977. There is no evidence as to whether or not this was a spawning run, although no young of the year were collected from the creek through 1977. Based on these limited data, it is not possible to predict whether or not this species would utilize the relocated Turkey Creek channel even if the habitat and water quality were suitable. Assuming that the new channel were stable and adequate overhanging vegetation and substrate were available, the relocated channel may be utilized by the rock bass (Amblophtes rupestris), smallmouth bass (Micropterus dolomieui), and largemouth bass (Micropterus salmoides). Adults of the former two species were observed in the lower reaches of Turkey Creek and adults of all three species were found in the lower reaches of Raccoon Creek during the Aquatic Ecology Associates sampling effort. No evidence of spawning in either watercourse by these species was noted, although there is evidence that they spawn in the nearshore areas of the lake. Juvenile largemouth and smallmouth bass apparently used much of Turkey Creek as a nursery area in the Summer

and Fall of 1977. As this is a previously undocumented type of occurrence, it is difficult to predict their reoccurrence in the new stream.

6.323
It is less likely that the new creek would be used extensively by such salmonids as the coho salmon, chinook salmon, and rainbow trout unless these species were stocked in this watercourse as juveniles or eggs. It is possible that some individuals may enter the new stream as strays since this phenomena has been observed on several occasions by personnel of the Ohio Department of Natural Resources. Salmonids might migrate up the new channel to undisturbed portions of the watershed but the use of these areas and the relocated stream channel would depend on such factors as flow, water quality, temperature, and substrate type. The addition of rubble and/or gravel to upstream portions of the new creek and the careful regulation of creek flows could provide suitable habitat for salmonids.

6.324
The present success of Turkey Creek and Raccoon Creek as seasonal holding areas for larger Lake Erie fish species may be related to the configuration of the terminal pool at the mouth of each stream. Similar pool construction would be required at the mouth of the relocated channel to afford the same overall benefit to lake species.

6.325
In summary, the reestablishment of conditions in the relocated creek which are comparable to the original Turkey Creek channel, would depend on a proper flow regime, bank stabilization, pool and riffle habitat distribution, stability of the streambed and suitability of bottom substrate, riparian and instream cover, diversity of food sources, and good water.

6.326
The applicant has studied the proposed alternative and finds that the costs generally outweigh the questionable benefits. Further, establishment of a new channel would preclude future expansion of the Lakefront facility or at the very least, would require the filling of the new Turkey Creek channel. Therefore, this alternative has not been considered further by the applicant.

Setback of Plant Structures to Achieve Protection of Turkey Creek and Adjoining Upland Habitat

6.327
Under this alternative course of action, Turkey Creek would be left intact along with the native riparian and terrestrial vegetation up

to the 640-foot contour. Plant drainage would be directed away from the Turkey Creek channel to protect water quality.

6.328
Some decrease in flow could also occur due to interception and diversion of surface water flow within the Lakefront site. Low flows could be augmented by using untreated intake water or impounded surface water runoff. However, use of runoff water from the plant area might increase the input of heavy metals and organic contaminants unless some type of treatment were provided. The principal advantages of this alternative include the following: maintenance of the original Turkey Creek channel and its connection with riparian habitat and upland vegetative cover; preservation of existing stream substrate and cover, as well as the terrestrial and aquatic biota; reduced potential for siltation and erosion.

6.329
The applicant indicates that this proposal would require the relocation of some plant structures. Although a change in plant configuration is possible, the creek ravine would have to be traversed at several locations to afford vehicle and raw material access. In establishing these crossing points, culverting and the placement of fill in the creek would be required to accommodate bridges or conveyor belt systems. Dust and spillage occurring at these crossing points could have an adverse impact on water quality. Similarly, the close proximity of individual plant process units would increase the rate of deposition of airborne particulates which, if present in sufficient quantity, could damage vegetation and degrade the quality of surface water runoff as it entered the creek naturally. Overall, the combination of spillage and airborne particulates entering Turkey Creek might be high enough to cause contravention of Ohio Water Quality Standards.

6.330
Protection of the creek and establishment of a greenbelt would eliminate a potential solid waste disposal site. Under these circumstances, the applicant has indicated that the shrublands, forested areas, and wetlands in the eastern portion of the Lakefront plant site might be cleared to insure that sufficient onsite solid waste disposal capacity would exist.

6.331
Even if the creek and riparian habitat were left intact, the applicant fully intends to limit public access. Although fish and wildlife could move outside of the site and be harvested, hunter and fishermen access to the site would be denied.

6.332
Another alternative considered by the applicant involves the rearrangement of the plant to preserve Turkey Creek. Under this plan, the Lakefront facility would be shifted eastward reducing the amount of land available for future expansion. Further, such a rearrangement would place plant emission sources nearer public access areas such as Raccoon Creek County Park.

6.333
In summary, the applicant does not consider this third alternative to be acceptable since it would preclude future plant expansion, deteriorate water quality and habitat in Turkey Creek, increase project costs by requiring the construction of bridges and overhead conveyance systems, and result in the loss of additional wildlife habitat due to relocation of solid waste disposal areas.

ALTERNATIVE PIER EXTENSION AND DOCK DESIGN

6.334
The applicant originally proposed the construction of a pier extension and new dock based on a "solid" pier type design. This original design would have impeded water circulation, deteriorated water quality, and occupied an unnecessary amount of benthic habitat. To reduce the water circulation and water quality problems and lessen the amount of habitat destroyed, the solid type construction has been replaced by an alternative "open" pier design. Both the original design and the new design are discussed in Chapters One and Four.

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CHAPTER SEVEN: RELATIONSHIP BETWEEN LOCAL AND SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM BENEFICIAL USES

Introduction

7.1
This chapter sets forth the relationship between the short-term use of man's environment implicit in the construction and operation of the proposed Lakefront Steelmaking Facility and the inherent long-term impact of the proposal on future generations. During the relatively short life of the proposed facility the present generation will derive benefits principally in the form of steel and its related products. The effect of meeting society's demand for steel is a continuation and possible expansion of the standard of living. However, the environmental cost of this short-term use can be transmitted to future generations, affecting their standard of living.

Land Use

7.2
The proposed Conneaut site comprises a total of 2,760 acres. Within this area is located a "primary impact area" of 1,766 acres; a greenbelt area surrounding Turkey Creek of 504 acres, and approximately 487 acres of undeveloped land. The "primary impact area" would include approximately 800 acres of impervious surfaces and ponds with the remaining area covered with grass or slag. During the operational lifetime of the plant, solid wastes would require approximately 125 acres of disposal area. This area may be located off-site and/or on-site, outside of the "greenbelt" area. After the effective life of the plant, future land use will depend on the steel mill decommissioning plans. If the site is not reused as a steelmaking facility, only those areas which contained structures which could not be economically removed would be unavailable for reclamation.

Aquatic Ecosystem

7.3
The major long-term impact of the proposed facility at Conneaut is the permanent loss of aquatic habitat. Many of the construction alternatives require that Turkey Creek be diverted and that some part of the existing channel be filled. The current proposal to install a culvert in the lower reaches would eliminate 7,500 feet of natural streambed habitat and replace it with 5,600 feet of culvert. The overall length of the stream would be reduced by 1,900 feet. Although small, this tributary is considered significant in view of the number of Lake Erie tributaries which have already been degraded

or sufficiently altered to impair their value as a recreational or fishery resource. In addition, Turkey Creek is one of two beach-fishery oriented salmonid habitats managed by the Ohio DNR and one of only nine cold water streams which presently exist in the State of Ohio. Spawning and nursery habitat for fish and waterfowl resting areas would be lost as piers are constructed and maintenance dredging is performed. Although this constitutes a short-term commitment it may become a long-term loss if these facilities are used for some other purpose after decommissioning.

7.4
The withdrawal of Lake Erie waters for cooling purposes will result in the entrainment and impingement of aquatic organisms. The present design and location of the plant intake structure would have a significant impact on such species as rainbow smelt, gizzard shad, carp, freshwater drum and a number of unidentified minnows. Over the short-term (i.e. the life of the facility) the plant-induced population losses may be high enough to affect individual year losses. In addition, total lakewide or basinwide effect may be worse when the proposed action and all other similar projects are considered on a cumulative basis. If the loss of individual fish species causes changes in lakewide population predator prey relationships may become unbalanced and other changes in the food chain may occur. The net result could cause affected populations to recover slowly or not at all once the plant is decommissioned. In this case the proposed action would have a long-term effect.

Terrestrial Ecosystem

7.5
Impacts on the terrestrial ecosystem of the Conneaut site will occur due to construction activities and solid waste disposal operations. Disruption of vegetation succession as a result of land clearing, displacement of wildlife and changes in movement of fauna due to physical barriers will be by-products of the proposed construction. The application of proper reclamation techniques for solid wastes will have only a short-term impact on the area although there will be a permanent alteration of the landscape. Long-term impacts associated with the proposed Conneaut site can occur through the accumulation of trace elements in plants and soil. Proper reclamation procedures will minimize these effects.

Air Quality

7.6
Construction and operation of the proposed steel mill will result in some short-term degradation of air quality. Increases in ambient water vapor, carbon dioxide, sulfur oxides, nitrogen oxides, particulates and trace elements will result from plant operation.

Synergistic interaction of plant emissions with high ambient ozone levels may affect sensitive crops, nursery stock and native vegetation. Over the life of the plant the potential for this occurrence will diminish as regulatory agencies take action to control and reduce ozone emissions. Similar effects will also be experienced as sulfate emissions from the proposed plant are added to the ambient levels. However, these emissions will be below allowable Federal and State standards. If at the end of the projected life of the plant all combustion produced emissions cease, no long-term impacts on air quality are foreseen.

Water Quality

7.7
No long-term impacts on water quality are expected as a result of the construction or operation and maintenance of the proposed facility, nor will the proposed plant foreclose future options on area water quality if all necessary precautions are taken to control leaching of toxic substances from land disposal sites. Waste heat, increased suspended solids levels and increased loading of organics are short-term impacts expected during plant operation.

Air Use

7.8
The proposed facility is awaiting issuance of a "no hazard" determination to regional and local aircraft by the Federal Aviation Administration. The long-term impact of the facility on the air use will depend on decommissioning plans developed by the applicant. If the stacks are removed, no restrictions on air space are anticipated.

Mineral Use

7.9
The yearly production of 6.4 million tons of steel at the proposed facility will require the consumption of nearly 18.0 million tons of primary raw materials as well as additional fuel supplies averaging 440,000 tons for the basic process operations and steam generation. Support operations such as mining and shipping will result in additional energy demands. The raw materials that the facility will demand constitute only a small percentage of the total U. S. reserves, but are nonetheless nonrenewable.

Aesthetics

7.10
Over the short-term the proposed action will result in a fundamental change in land use of the property bordering the Lake Erie shoreline

between Conneaut Creek and Raccoon Creek. Replacement of the natural vegetated shoreline with an industrial complex will have an impact on aesthetic values. The long-term impact of the proposed plant on local aesthetics will depend on the actions taken during decommissioning. Assuming all above-ground structures are removed, no long-term aesthetic impact will result. During the operational life of the plant (and after, if the structures remain) the plant will dominate the rural landscape. The solid-waste disposal site, if properly revegetated, will provide relief in an area that is relatively flat, resulting in a long-term change in appearance of the site.

Human Productivity

7.11
The proposed Lakefront Steelmaking Facility will have impacts on long-term human productivity in the Regional Study Area. Increase in employment, with associated increases in wages and disposable income, will occur during the operational life of the proposed project. In addition, a considerable amount of tax revenue is expected to be provided by the proposed project for the Local Study Area. Recreational facilities, such as the area around the mouth of Turkey Creek, would be lost as a fishing access area for local fishermen. Loss of reproductive habitat for woodcock on the site may result in a reduction in the regional quality of hunting of these birds. Other reductions in previous human uses of the environment of the project site include the loss of hunting areas; loss of fishing access at the U. S. East Breakwater at Conneaut Harbor, 50 to 60 summer cottages on the applicant's property along Lake Road, and the loss of 76 acres (less than one percent of the total site) of agricultural land. The creation of a new steelmaking plant represents an investment of human resources to increase the ability of mankind to produce a product satisfying human needs. The ultimate utilization and distribution of resources accruing to individuals, and local, State and Federal Governments thereby is a matter determined by individual and governmental policies and decision. Present day policy is to divert a portion of governmental resources toward the preservation of wetlands and natural areas. The balance between human needs and the natural environment then becomes a function of human priorities.

CHAPTER EIGHT: IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Introduction

8.1
This chapter identifies unavoidable environmental impacts of the proposed action which irreversibly curtail the range of potential uses of the environment or result in the commitment of resources that are neither renewable nor recoverable. Thus, an irreversible commitment results in environmental changes which could not, at a future date, be altered to restore the environment to its preproject state. For the purpose of this discussion the term "resource" is defined to include not only commitments of labor and materials, but also natural and cultural resources committed to loss or destruction as a consequence of the construction, operation, and maintenance of the proposed Lakefront Steelmaking Facility in Conneaut, OH.

Material Resources

8.2
The construction and operation of the proposed Lakefront Steelmaking Facility will involve both long and short-term commitments of natural resources. Some materials involved in the construction process (structural steel, aluminum, copper, tin, etc.) will be available for reclamation if, at the conclusion of the proposed plant's operating life, it is economically feasible to recycle these materials. The amount of these materials actually utilized in the construction of the proposed plant will comprise a very small fraction of U. S. and world production and should have an insignificant impact on the availability of these resources.

Minerals

8.3
The annual production of 6.4 million tons of steel products projected by the proposed facility will require the consumption of 7.8 million tons of pellets, 2.8 million tons of ore, 1.4 million tons of limestone, and up to 6.0 million tons of coals and oil, for a total of 18.0 million tons of primary raw materials as well as additional fuel supplies averaging 440,000 tons for the basic process operations and steam generation. Thus, each ton of steel product will require the consumption of almost 3.1 tons of raw materials. Additional nonrecoverable fuel losses will be incurred in mining, construction, transportation of materials, and other associated facility support

operations. These consumable resources will be irretrievably committed. A proportion of the steel products created will be recycled in accordance with industry practices on reuse of scrap materials.

Human Resources

8.4
The construction, operation, and maintenance of the proposed facility at Conneaut will require the commitment of human resources to design, build, and operate the plant as well as design, build, mine, and transport the necessary supplies and materials. Approximately, 30,000 man-years will be required for the construction of the facility, and 8,500 man-years for each year of operation will be required for the duration of the proposed plant. These figures do not include the additional man-years required for ancillary operations such as mining and transportation of raw materials and for any anticipated future growth of the proposed facility. The described investment of human activity will result in a product that will, in turn, be distributed and redistributed throughout human society in many forms. The extent to which these human resources constitute an irreversible and irretrievable commitment is a direct function of perceived permanence of product use.

Other Resources

8.5
Natural and cultural resources committed to loss or destruction as a consequence of the construction, operation, and maintenance of the proposed facility are difficult to quantify as a percent of available resources. Most are not irreversible or irretrievable commitments. When the plant is decomissioned, the land is again available, water consumption is ended and air is available as a dispersal medium for others. Archeological sites not identified during predictive and intensive surveys or during construction monitoring could be lost. This represents a potential impact that could be irreversible. Resources which might be considered irreversibly and irretrievably committed, such as terrestrial and aquatic habitat may, in fact, be reestablished after plant decommissioning depending on what future use is made of the site. Changes in the ecology and biology of streams that are filled or otherwise altered during the course of the project constitute a long-term resource commitment. Restoration of these watercourses to their original preproject condition is costly and time-consuming and, even if such an action is possible, there is no incentive for the applicant to undertake such a project. Placement of solid waste at certain locations within the Lakefront site boundary may preclude utilization for other purposes (recreation, installation of buildings and structures, etc.) and on this basis may constitute a long-term irreversible land resource commitment.

CHAPTER NINE: COORDINATION WITH OTHERS

Interagency Coordination

9.1
During the review of the U. S. Steel Corporation permit application, it became apparent that a multidisciplinary evaluation would be required to identify and define the environmental impacts associated with the construction and operation of the proposed steel mill. To initiate such an evaluation, it was necessary to bring together a number of agency representatives with specialized expertise in the various technical disciplines as well as a thorough working knowledge of Federal, State, and local regulatory guidelines applicable to the proposed mill. These same representatives would also direct the applicant in the collection of the necessary environmental data on which the impact analysis would be based; review these data for technical accuracy; insure that the baseline information were evaluated in an unbiased manner; and identify alternative courses of action which would lessen the overall impact of the steel mill. To achieve these goals, an interdisciplinary technical team was established on 2 March 1977. The technical team was composed of representatives from the U. S. Army Corps of Engineers (Buffalo District), U. S. Environmental Protection Agency (Regions III and V), Federal Regional Council (Regions III and V), U. S. Fish and Wildlife Service, National Marine Fisheries Service, State of Ohio and the Commonwealth of Pennsylvania, as well as the U. S. Steel Corporation and its consultant, Arthur D. Little, Inc.

9.2
During the first few technical team meetings, the groundwork for the evaluation of the U. S. Steel proposal was developed. Basically, this involved segmenting the project, so that each impact discipline could be related to the construction and operation of the proposed facility. A separate workshop session was held for each area of concern. These meetings were attended by agency specialists as well as the designated technical team representatives. A list of the technical workshop sessions held to date is presented below:

5 April 1977	- Air Quality
6 April 1977	- Water Quality
14-15 April 1977	- Fish and Wildlife Concerns and Development of Alternatives which would Lessen Environmental Impacts
25 April 1977	- Socio-Economics
2 May 1977	- Geology and Hydrology
11-12 May 1977	- Plant Process Technology
25-26 May 1977	- Secondary Development Impacts and Transportation
15 June 1977	- Plant Emissions and Effluents

24 June 1977 - Aquatic and Terrestrial Field Investigations
29 June 1977 - Solid Waste
29 July 1977 - Best Available Control Technology (BACT) and Lowest Achievable Emission Rates (LAER)
9 August 1977 - Best Available Demonstrated Technology (BADT): Effluents
12 August 1977 - Air Quality Modeling (update)
30 August 1977 - BACT/LAER Agreement on Limits for Use in Modeling, Process Technology, and Assessment of Environmental Impact
3 October 1977 - BACT/LAER, Emissions
3-5 October 1977 - Assessment of Turkey Creek Impacts and Review of Potential Alternative Courses of Action
12 October 1977 - Emission Inventory
31 October 1977 - Turkey Creek Compensation Measures
1 November 1977 - SIMPACT IV Model
7 November 1977 - Worst Case Scenarios for Air Modeling
19-20 December 1977 - Socio-Economic Meeting
15 March 1978 - Water Quality Considerations
8 August 1978 - Turkey Creek Mitigation
8 September 1978 - COHO/USS Combined Air Quality Impact
13 September 1978 - Population Issues
16 October 1978 - Turkey Creek Mitigation
23 January 1979 - Intake Siting and Aquatic Sampling

9.3
Overall, the technical team has provided valuable assistance in the development and analysis of the data contained in this Environmental Impact Statement. Their support will continue until such time as a decision is made on this Department of the Army permit application.

Coordination with the General Public

9.4
Public involvement is an integral part of any environmental impact analysis. To provide ample opportunity for the presentation of the views and concerns of the general public on this proposal, a series of public hearings were held. In this regard, formal hearings were held on the following dates:

Hearings Prior to Issuance of the Draft Environmental Impact Statement

16 May 1977 Conneaut, OH
29 June 1977 Erie, PA
30 June 1977 Ashtabula, OH

Hearings Prior to the Issuance of the Final Environmental Impact Statement

11 July 1978	Conneaut, OH
25 July 1978	Erie, PA
14 August 1978	Ashtabula, OH
22 August 1978	West Springfield, PA

9.5
Informal workshops were also scheduled to familiarize local residents with the Lakefront steel plant proposal. These sessions were held on 4 May 1977, in Albion, PA; 16 June 1977, in Edinboro, PA; and 21 June 1977, in Conneaut, OH. During the summer of 1978, the Corps staff appeared on local television stations to discuss the various issues related to the construction and operation of the proposed plant. A public meeting was also held on 18 October 1978, in Conneaut, OH, to familiarize the public with the Federal and State regulatory agency comments on the Draft Environmental Impact Statement.

Data Provided by Others

9.6
During the review and evaluation of the U. S. Steel Corporation permit application, various agencies, groups and organizations provided information which was useful in the establishment of baseline conditions or the assessment of environmental impact. In general, this input consisted of social, economic, and environmental data; modification of plant design; designation of specific alternative courses of action; and the relationship of local or regional planning to the development of the proposed steel mill. A list of the organizations providing input for the environmental statement is presented below:

American Medical Association
Citizens for Land and Water Use
Concerned Citizens of Conneaut
Crawford County Tourist Association
Downwind Neighbors
Erie County Cooperative Extension Agency
Erie County Dairy Herd Improvement Association
Erie County Farmers Association
Fairview Evergreen Nurseries
Gannon College, Earth Sciences Department
Great Lakes Tomorrow
Keystone Foods
League of Women Voters
Manufacturer's Association of Erie
NY Great Lakes Grape Industry Program
Ohio State University, Center for Lake Area Research

Pennsylvania Cooperative Potato Growers Association
Pennsylvania Nurserymen's Association
Pennsylvania State University, College of Agriculture
Sierra Club
Southern Scrap Metal Company, Limited
Union City Cooperative Association
Welch Foods, Inc.

Land Use Plans

9.7
Federal, State, and local agencies responsible for land use planning, coastal zone management, or other related activities were contacted to determine whether or not the proposed action would be compatible with these programs. Formal inquiries were sent to the following agencies: U. S. Department of Housing and Urban Development; Ohio Department of Natural Resources; Pennsylvania Office of State Planning and Development; Ashtabula County Planning Commission; Ashtabula Metropolitan Housing Authority; Ashtabula County Council of Governments; Erie Metropolitan Planning Commission; Conneaut Planning Commission; and the Zoning Officer of Springfield Township. Copies of the letters of request together with the responses from these agencies are appended to this Final Environmental Impact Statement. However, the reviewers advised that some agencies did not respond.

Cultural Resources

9.8
To obtain the input of the agencies responsible for the protection and recovery of archaeological resources, the results of the onsite and secondary field surveys were forwarded to the National Park Service and the appropriate State Historic Preservation Officers. Evidence of this coordination is appended to this statement.

Statement Coordination

9.9
On 23 May 1978, the Draft Environmental Impact Statement was released to the general public for review and comment. Notice of the availability of this document was published in the Federal Register on 5 June 1978.

9.10
Prior to the release of the Draft Environmental Impact Statement, several environmental groups requested that the usual 45-day review period be extended due to the complexity of the primary and secondary impact issues involved. This request was granted and the comment period was extended from 45 days to 90 days.

9.11
After this document was released to the general public, requests were received for a further extension of the review period by 30-90 days. These requests were denied on basis of the fact that all of the data concerning plant design and operation, baseline environmental conditions, and environmental impact considerations had been on file in local public libraries for nearly one year. However, comments were accepted for a reasonable amount of time following the close of the Draft EIS review period on 8 September 1978.

Responses to Comments

9.12
During the course of the review period, comments were received from the Federal, State, and local agencies, environmental and public interest groups, and the general public. A list of those individuals providing comments specifically related to the Draft EIS is presented below:

Federal Agencies

Agency	Letter of Comment Date	Response Code
W. H. Pennington, Director Division of Program Review and Coordination Office of NEPA Affairs Department of Energy Washington, DC 20545	19 September 1978	*
William H. Foege, MD Assistant Surgeon General Director Department of Health, Education, and Welfare Public Health Service Center for Disease Control Atlanta, GA 30333	17 August 1978	PHS
Walter Pierson Regional Director Federal Insurance Administration Department of Housing and Urban Development, Region III Curtis Building Sixth and Walnut Streets Philadelphia, PA 19106	4 August 1978	*

*Comments did not warrant a response.

Federal Agencies (Cont'd)

Agency	Letter of Comment Date	Response Code
Tomas C. Maloney Mid-Atlantic Federal Regional Council Curtis Building, Room 922 6th and Walnut Streets Philadelphia, PA 19106	11 October 1978	*
George R. DeVeny Regional Planning Staff Division of Navigation Development and Regional Studies Tennessee Valley Authority 290 Liberty Building Knoxville, TN 37902	21 August 1978	TVA
Robert E. Quilliam State Conservationist U. S. Department of Agriculture Soil Conservation Service Room 522, Federal Building 200 North High Street Columbus, OH 43215	18 July 1978 7 September 1978	DA
Sidney R. Galler Deputy Assistant Secretary for Environmental Affairs U. S. Department of Commerce The Assistant Secretary for Science and Technology Washington, DC 20203	5 September 1978	DOC
Ron Gatton Regional Administrator Department of Housing and Urban Development, Region V 300 South Wacker Drive Chicago, IL 60606	12 September 1978	HUD

*Comments did not warrant a response.

Federal Agencies (Cont'd)

Agency	Letter of Comment Date	Response Code
David L. Jervis Regional Environmental Officer U. S. Department of the Interior Office of the Secretary North Central Division 2510 Dempster Street Des Plaines, IL 60016	31 August 1978	FWS
Jack L. Schramm Regional Administrator U. S. Environmental Protection Agency, Region III 6th and Walnut Streets Philadelphia, PA 19106	7 September 1978	EPA
Valdas V. Adamkus Acting Regional Administrator U. S. Environmental Protection Agency, Region V Chicago, IL 60604	7 September 1978	EPA
Voss A. Moore, Assistant Director for Environmental Projects Division of Site Safety and Environmental Analysis U. S. Nuclear Regulatory Commission Washington, DC 20555	1 June 1978	*
Franz K. Gimmler Acting Regional Representative of the Secretary U. S. Department of Transportation 434 Walnut Street Philadelphia, PA 19106	5 September 1978	DOT

State and Local Agencies

New York:

Mary Anne Krupsak Lieutenant Governor State of New York Albany, NY 12224	19 September 1978	NY

*Comments did not warrant a response.

State and Local Agencies (Cont'd)

Agency	Letter of Comment Date	Response Code
Ohio:		
Ned E. Williams, P. E. Director Ohio Environmental Protection Agency P.O. Box 1049 361 East Broad Street Columbus, OH 43216	19 September 1978	OEPA
Board of County Commissioners County of Ashtabula 25 West Jefferson Street Jefferson, OH 44047	11 July 1978	*
Honorable Paul Williams Mayor, City of Conneaut City Hall Building Conneaut, OH 44030	6 September 1978	CCM
James V. Anthony, Chairman Conneaut Port Authority City of Conneaut, OH P.O. Box 218 Conneaut, OH 44030	5 September 1978	CPA
Robert W. Wadsworth City Engineer The City of Conneaut City Hall Building Conneaut, OH 44030	11 August 1978	CCE
Raymond V. Wollschleger, Jr. Director, Department of Housing, Planning, and Community Development 244 Mill Street Conneaut, OH 44030	29 August 1978	CCD

*Comments did not warrant a response.

State and Local Agencies (Cont'd)

Pennsylvania:

Northwest Pennsylvania Futures Committee, Inc. Rural Route 1, Box 62B Route 20 and Nye Road West Springfield, PA 16443	22 August 1978	NWP
Jack G. Miller, Chief Pennsylvania Fish Commission Fisheries Environmental Services Robinson Lane Bellefonte, PA 16823	8 September 1978	PFC
Glenn L. Bowers Executive Director Pennsylvania Game Commission P.O. Box 1567 Harrisburg, PA 17120	8 September 1978	PGC
Norval D. Reece Secretary of Commerce Commonwealth of Pennsylvania Harrisburg, PA 17120	25 August 1978	*
Maurice K. Goddard The Secretary Commonwealth of Pennsylvania Department of Environmental Resources P.O. Box 1467 Harrisburg, PA 17120	31 August 1978	PDER
George S. Pulakos, P.E. Acting Secretary of Transportation Commonwealth of Pennsylvania Harrisburg, PA 17120	6 September 1978	PDOT
Timothy C. Saylor Acting Director Division of Sanitary Engineering Erie County Department of Health 606 West Second Street Erie, PA 16507	5 September 1978	EDH

*Comments did not require a response.

State and Local Agencies (Cont'd)

Agency	Letter of Comment Date	Response Code
Pennsylvania:		
Edward P. Edinger Planning Director Crawford County Planning Commission Courthouse Meadville, PA 16335	14 August 1978	CWP
Betty Dudenhauer Executive Director Crawford County Tourist Association Courthouse Meadville, PA 16335	11 August 1978	*
Glenn J. Knight, Executive Director Northwest Pennsylvania Regional Planning and Development Commission Suite 406 Biery Building Franklin, PA 16323	11 September 1978	NPR
Jack N. Gunter President of Council Borough of Albion 15 Franklin Street Albion, PA 16401	22 August 1978	BA
Honorable Louis J. Tullio Mayor, City of Erie Municipal Building Erie, PA 16501	7 September 1978	E
David L. Wendtland City Manager City of Meadville Meadville, PA 16335	10 August 1978	*
Springfield Township East Springfield Borough, PA	22 August 1978	STP

*Comments did not require a response.

State and Local Agencies (Cont'd)

Agency	Letter of Comment Date	Response Code
David Livingston Chairman South Shenango Planning Commission Jamestown, PA 16134	29 August 1978	SST

Public Interest and Environmental Groups

Organization		
Joseph Zingaro Chairman Concerned Citizens P.O. Box 517 Conneaut, OH 44030	6 September 1978	CON
Ellen Knox, Don Anthony, Joseph J. K. Wisnewski Conneaut Ad Hoc Committee 2160 North Taylor Road Cleveland Heights, OH 44118	6 September 1978	AHC
Anthony J. Thomas, Secretary Crawford County Sportsmen's Council, Inc. (No Address Given)	6 September 1978	CSC
Core Members of Downwind Neighbors (No Address Provided)	Undated	DW
Downwind Neighbors (No Address Provided)	29 August 1978	DW
Jack Schweigert Attorney for Downwind Neighbors (No Address Provided)	1st September 1978	ADN
Erie County Farmer's Association (No Address Provided)	Undated	ECFA

*Comments did not require a response.

Public Interest and Environmental Groups (Cont'd)

Organization	Letter of Comment Date	Response Code
D. Garth Hetz, President Fairview Evergreen Nurseries, Inc. Fairview, PA 16415	24 July 1978	FEN
Barbara Bol, Chairman Land Use Committee League of Women Voters of Erie County 709 Hilltop Road Erie, PA 16509	16 June 1978	LWV
Alan J. McDonald, President Manufacturers Association of Erie 5 West Tenth Street Erie, PA 16501	7 September 1978	MAE
Marshal T. Case Regional Representative National Audubon Society Central Midwest Regional Office Elizabethtown Mall, Suite 15 Elizabethtown, KY 42701	5 September 1978	NAS
Robert C. Musselman Research Associate New York State Agricultural Experiment Station Department of Pomology and Viticulture Hedrick Hall Geneva, NY 14456	24 August 1978	SAE
Thomas G. Davenport, President New York State Grape Production Research Fund, Inc. 2 South Portage Street Westfield, NY 14787	8 September 1978	GG
Ellen Knox, Chairman Great Lakes Task Force Sierra Club, Ohio Chapter (No Address Provided)	20 September 1978	OSC

*Comments did not require a response.

Public Interest and Environmental Groups (Cont'd)

Organization	Letter of Comment Date	Response Code
Fred Olson Trout Unlimited 9278 Liberty Road Twinsburg, OH 44087	1 September 1978	TU
General Public		
Individual		
Donald D. Anthony 2160 N. Taylor Road Cleveland Heights, OH 44112	28 August 1978	A
Gerald C. Allender 6550 Naeff Road Fairview, PA 16415	7 September 1978	GA
Joan N. Barnett 747 Buffalo Street Conneaut, OH 44030	18 July 1978	JB
Richard G. Beck 848 West 51st Street Erie, PA 16509	Undated	RB
William Branigan RD 1, Box 4-B Jamestown, PA 16134	2 September 1978	WJB
Helen W. Clark 367 Old Main Road Conneaut, OH 44030	8 September 1978	HC
Kirk Evans 1184 Oneida Street State College, PA 16801	8 September 1978	KE
Karl E. Ebert RD 2, Perry Highway Waterford, PA 16509	4 September 1978	KEE

*Comments did not require a response.

General Public (Cont'd)

Individual	Letter of Comment Date	Response Code
Gary Garn 5968 Glade Drive Erie, PA 16509	Undated	*
Charles R. Gaukel 37 Sunset Drive Conneaut, OH 44030	Undated	CRG
Janice Gustafson Box 28 Towers Edinboro State College Edinboro, PA 16412	5 September 1978	*
Gertrude Hirsimaki 455 Middle Road Conneaut, OH 44030	6 September 1978	*
Richard T. Kleppick 325 Winders Street Pittsburgh, PA 15207	30 August 1978	RK
Donald Koppelman 326 Beverly Drive Erie, PA 16505	5, 6, 7 September 1978	DK
Alvin W. Levenhagen RD 2 Linesville, PA 16424	13 September 1978	LV
Richard J. Markiewicz 418 Peninsula Drive Erie, PA 16505	7 September 1978	RJM
Edward D. Mentz 3025 Holland Street Erie, PA 16504	22 July 1978	EDM
Mrs. Charles A. Mertens 331 Lincoln Avenue Erie, PA 16505	6 September 1978	CAM

*Comments did not require a response.

General Public (Cont'd)

Individual	Letter of Comment Date	Response Code
Tom Michlovic 1103 Kirkpatrick Avenue North Braddock, PA 15104	25 August 1978	TM
Mark Montefiori 1009 West 36th Street Erie, PA 16508	5 September 1978	MM
Colette Piotrowicz 644 East 11 Street Erie, PA 16503	7 September 1978	*
Leroy D. Tillman (No Address Provided)	6 September 1978	LPT
Bradley T. Shaw 1403 Peninsula Avenue Erie, PA 16512	Undated	BTS
Bob Wellington 1057 West 5th Street Erie, PA 16507	1 September 1978	*
L. E. Wellington 1057 West 5th Street Erie, PA 16507	1 September 1978	*
Rachael Williams 634 Lake Road Conneaut, OH 44030	Undated	RW
John Wisinski 1019 Wallace Street Erie, PA 16503	5 September 1978	JW

*Comments did not require a response.

Pertinent Comments Received at Public Hearings During the Draft EIS Review Period

Name	Date	Response Code
Pearle D. Robertson (Address not Provided)	11 July 1978	PHCOE-1
Pearle D. Robertson (Address not Provided)	11 July 1978	PHCOE-2
J. Gene Fuller 949 Plymouth Road Ashtabula, OH 44004	11 July 1978	PHCOE-3
Joseph Zingaro 603 Lake Road Conneaut, OH 44030	11 July 1978	PHCOE-4
Joseph Zingaro 603 Lake Road Conneaut, OH 44030	11 July 1978	PHCOE-5
Pearle D. Robertson (Address not Provided)	11 July 1978	PHCOE-6
Stanley Robertson 397 E. Main Road Conneaut, OH 44030	11 July 1978	PHCOE-7
Wasinder Mokha City of Erie 4201 Sassafras Street Erie, PA 16508	25 July 1978	PHCOE-8
Wasinder Mokha City of Erie 4201 Sassafras Street Erie, PA 16508	25 July 1978	PHCOE-9
George D'Angelo 6043 Sterrettania Road Fairview, PA 16415	25 July 1978	PHCOE-10

Pertinent Comments Received at Public Hearings During the Draft EIS Review Period (Cont'd)

Name	Date	Response Code
Julianne Loesch PAX Center Community Services 345 East 9th Street Erie, PA 16503	25 July 1978	PHCOE-11
Don Koppelman 326 Beverly Drive Erie, PA 16505	25 July 1978	PHCOE-12
William Welch 3108 Highland Road Erie, PA 16506	25 July 1978	PHCOE-13
William Welch 3108 Highland Road Erie, PA 16506	25 July 1978	PHCOE-14
Gary Cacchione 457 West Front Street Erie, PA 16507	25 July 1978	PHCOE-15
David F. Dieteman 1611 Peach Street Erie, PA 16501	25 July 1978	PHCOE-16
Joseph K. Wisneski 3532 Silsby Road Cleveland Heights, OH 44118	25 July 1978	PHCOE-17
Joseph Zingaro 603 Lake Road Conneaut, OH 44030	25 July 1978	PHCOE-18
Joe Purdek 449 East 14th Street Erie, PA 16507	25 July 1978	PHCOE-19
Unidentified Speaker	25 July 1978	PHCOE-20

Pertinent Comments Received at Public Hearings During the Draft EIS Review Period (Cont'd)

Name	Date	Response Code
William Welch 3108 Highland Road Erie, PA 16506	25 July 1978	PHCOE-21
Joseph Zingaro 603 Lake Road Conneaut, OH 44030	14 August 1978	PHCOE-22
Gary Cacchione 457 West Front Street Erie, PA 16507	14 August 1978	PHCOE-23 through and including PHCOE-33
John [illegible] 832 West 2nd Street Erie, PA 16507	14 August 1978	PHCOE-34
Barry Oliver (Address not Provided)	22 August 1978	PHCOE-35
George Atkin Springfield Township and Borough 11 Jefferson Tidioute, PA 16531	22 August 1978	PHCOE-36
Gary Cacchione 457 West Front Street Erie, PA 16507	22 August 1978	PHCOE-37
Donald D. Anthony 2160 N. Taylor Road Cleveland Heights, OH 44112	22 August 1978	PHCOE-38

9.13
Copies of the letters of comment received during the Draft EIS review period have been appended to this statement. Each letter has been assigned a response code consisting of one or more alphabetical letters, while consecutive numbers have been assigned to individual comments contained in each letter. For example, the correspondence received from the United States Environmental Protection Agency would contain comments designated EPA-1, EPA-2, EPA-3, . . . and so on.

The letters themselves have been bracketed and coded so the reviewer can readily locate the Corps staff response to any given comment.

9.14
Where appropriate, a written response has been prepared for each comment. However, in some cases, a substantial number of comments dealt with one particular area of concern. When this occurred, the comments were grouped together and addressed by a single response. The comments and their respective responses have been arranged alphabetically and cross-referenced as required.

9.15
Some of the letters of comment contained lengthy inclosures consisting of statistical data and publications by other agencies and organizations. Since this documentation did not have any direct bearing on the comments themselves, it was deleted to conserve space. However, the inclosures are available for public inspection at the U. S. Army Corps of Engineers offices in Buffalo, NY, and Cleveland, OH, and the public libraries in Erie, PA, and Conneaut, OH.

9.16
The reviewer should note that staff responses are provided where pertinent issues and concerns were raised regarding impact of the proposed Lakefront plant on the environment. No attempt was made to address comments of an emotional nature or refute the stated positions of agencies, groups, or individuals.

9.17
In addition to the concerns raised during the review period for the Draft EIS, the Corps staff also formulated a list of questions concerning air quality, water quality, regulatory permit requirements, and secondary growth and development. These questions were forwarded to the U. S. Environmental Protection Agency and the Federal Regional Council for response. The original questions and the agency responses are appended to this Final EIS.

Information Appended to this Statement

9.18
During the preparation of this Environmental Impact, numerous contacts were made with Federal, State, and local agencies representatives and others concerning the construction and operation of the proposed Lakefront plant and the implementation of measures to mitigate environmental impact. The letters of coordination pertaining to these issues have been grouped into a series of appendices attached to this Final EIS. Baseline data used to predict ichthyoplankton entrainment at the plant intake structure and a description of the

discharge plume model have been incorporated in a similar manner. A complete list of the appendices contained in this statement is presented below:

Appendix	Title
A	Letters of Comment Received During the Review of the Draft EIS
B	EIS - Cultural Resources; Land Use Plans, Policies and Controls, Effluent Limitations, and Plume Modeling; Prime and Unique Farmlands; Socio-Economic Baseline Evaluation; Air Quality
C	Water Quality Modeling for the Lakefront Plant
D	Baseline Data Utilized for Ichthyoplankton Entrainment Analysis and Scope of Work for Additional Studies
E	Comments Pertaining to Modification of the Lakefront Plant Proposal and Mitigation of Environmental Impact
F	Minutes of the Federal Regional Council Meeting of 13 September 1978, and the Applicant's Response to the Issues and Concerns Raised
G	Agency Responses to Pertinent Issues Raised by the Corps Staff.

9.19
The Working Papers that contained the assumptions used to perform the socio-economic impact analysis for the Lakefront Facility were not changed or otherwise altered (other than footnote modifications) during the EIS review process. As such, the appendix containing these documents has been deleted to conserve space. Reviewers are advised to refer to the Draft EIS for specific information contained in the Working Papers.

COMMENTS AND RESPONSES

Comment A-1:

To permit a major steel mill with all its accessory industry to grow along the shores of Lake Erie in this natural and agricultural setting would transform this special region into another major industrial center. It would drain the people of Pennsylvania and Ohio of sustenance in the form of energies, monies and efforts required to build the infrastructure to support this massive development, and, most importantly, it would crowd out and cause substantial loss in what today is probably one of the most important resources of this country, the resource to produce food.

Comment A-2:

To come now to certain points: This DEIS is grossly lacking with respect to (a) substance in the matters of secondary impact upon the important resources of this region such as the dairy and agricultural industries; and, (b) the economic and energy costs of transferring this large industry from current regions which have the infrastructure for steel such as Youngstown and perhaps Pittsburgh.

Comment HUD-4:

Appearing on page 4-469 is a discussion of secondary impacts as they relate to agriculture land use. This is expressed only in terms of the Regional Study Area. Given the extent of the Regional Study Area, the actual impact of losing a total of 1,200 acres of agricultural land is less significant than if it had been expressed in terms of agricultural land developed in the principal study area or the Coastal communities. In this regard, the EIS should also have attempted to identify the amount of prime farmland that would be adversely effected, in absolute terms and as a percentage of the total supply especially in the Principal Study Area and Coastal Communities.

Response A-1, A-2, HUD-4:

The projected losses of prime agricultural land under baseline and plant-related growth conditions are presented and discussed in Chapter 4.

Economic and energy-related costs associated with the siting of a steel manufacturing facility at Conneaut, OH, compared to other locations where the infrastructure already exists can be determined by reviewing Chapter Six of this Final EIS.

Comment A-2:

Refer to A-1

Comment A-3:

To quote Edgar Speer, Chairman of the Board of U.S. Steel, this project would ultimately achieve employment for some 8-10,000 steel workers and some 30,000 steel industry related workers. (See Conneaut News Herald, Feb. 24, 1977). Based upon simple formulas that estimate the number of backup personnel and families required to support this type of on-line work force, one can see the region expanding from a current 15,000 or 20,000 persons to an urban center of some 250-350,000 or more by the late 1900's. Lest this estimate be considered light speculation we should refer to the DEIS recorded projection for increase in consumption of natural gases. This projection is for an increase from 30 million cubic feet in 1978 to more than 900 million cubic feet in 1990 (DEIS 3 4-438). U.S. Steel repeatedly states it will not use natural gas at this project site. The increase in consumption of natural gas must therefore be assumed to go hand in hand with increased population density. A 30 fold increase in natural gas consumption would adjust nicely to the original work figures supplied by Chairman of the Board, Edgar Speer. It would add up to some 300-400,000 persons in this region by 1990. I do not believe that scientists from Arthur D. Little, engineers from U.S. Steel, or the Environmental Protection Agency people could or would argue that this would not convert this entire region to a massive industrial complex.

Response A-3:

The increase in steel production at the proposed plant would eventually support an additional 30,000 jobs throughout the United States in industries from coal mining to automobile manufacturing. However, as discussed in the DEIS and the Operations Working Paper (appended to the draft EIS), the applicant believes that very little secondary industrial development would occur in the Regional Study Area (approximately 1,300 jobs).

The increase in natural gas and other energy consumption refers to secondary use only. Natural gas used by new population and businesses would increase 30-fold over the course of the projection period, but, this would be insignificant compared to baseline conditions. The apparently dramatic increase is due to the fact that in 1979 (the first year of plant construction) very few new plant-related residents would be established in the study area.

Comment A-4:

These costs to public and nation are not genuinely addressed in the DEIS. Furthermore, the sparsity of pertinent data relative to this issue leads one to question the economic soundness of the "greenfield" approach even to the company itself, that is even when we separate cost from the point of national interest. Witness, for example, this report from a Chase Manhattan Bank study (Construction Equipment, 7/17/78).

"Greenfields construction, defined as construction of a new site, transportation facilities, plant and equipment, would require a price of $427.0 per ton in 1979.

Chase forecasts the going rate will fall 15% short, a $370.05 per ton. 'That represents a loss of almost $60 on every ton on steel produced. Under those conditions, greenfields expansion in the steel industry cannot be justified during the next ten years.'"

"The alternative is brownfields expansion, where an established site is upgraded with a new plant and equipment. 'It is much more feasible in the next decade.'"

Comment A-22:

(b) Does the applicant genuinely intend to create add on production facilities with this project or is it biding a holding action? Is it willing to continue polluting at existing facilities and to be fined until it can relocate these facilities to a region it can politically control; one which can be bent to more readily tolerate the quantities of particulate matter and chemicals it must emit; one which, because of current vacuum in political, people, and industrial structure, would be ultimately and utterly dependent upon the steel industry; therefore, not a location likely to challenge the applicant's action--by definition a naked steel town.

Comment A-24:

This statement treats the request for greenfield facilities predominantly as a translocation. The applicant states in the DEIS that its facilities at other sites would continue to remain operational so long as they remain in a profit mode. There is no reassurance for this policy. Moreover, the issue of profit can be readily turned to loss and hence shut down if--when already depreciated facilities such as Youngstown works becomes completely obsolete and/or break down--the cost for renovation is added to cost of production. Current evidences point to eventual shutdown at the Youngstown works and certain sites such as the Cleveland works are already announced for closure. Additional reports relating to environmental problems, such as the series of full page advertisements sponsored by the applicant in the Pittsburgh Press (see enclosure), do not help but foster this view. Moreover, this greenfield expansion at a time of shrinking American markets does nothing to foster the view that this facility would be expansion rather than relocation construction. The DEIS takes the loose words of the applicant, that an expanded market for American steel will occur in the 1980's, too much at face value. As a matter of fact, the realistic concerns for energy--petroleum conservation push gasoline rationing to the near future. With this a decrease in the automobile market or at the very least a decrease in size of vehicles should prevail. This might lead one to predict a decrease in steel markets. It would be wise to enlist the aid of other steel industries in accurately assessing future market predictions.

One further point--even should the Corps choose to regard this new facility as expansion rather than relocation construction--the evidence that steel industry shrinkage is already occurring in steel towns such as Youngstown remains uncontestable. Irrespective of who has produced or contributed to the problem in cities such as this, the addition of a new facility to such a location would make a positive contribution to the nation's urban centers.

Comment CON-11:

Chapter six of the draft environmental impact statement is deemed wholly unacceptable. Little mention is made of the possibility of constructing a brownfield plant. Also, if the lake front plant were to be built any subsequent closings of older steel making facilities owned by the applicant are not adequately addressed.

Comment CRG-7:

1.10 The statement that the construction of this plant is unrelated to other plants is totally without substantiation, and as will be noted later is in fact contradicted by other sections of the EIS. Once again, the Corps has simply taken the word of the applicant as sufficient evidence. There is in fact, much evidence to the contrary, as will be noted later.

Comment CRG-52:

6.2 This section states that not building this facility would increase dependence on older plants. Yet the applicant has repeatedly claimed in public that the construction of this plant is not related to the operation of its other plants. One must congratulate the applicant, for this company has a remarkable ability to speak out of both sides of the mouth at the same time. Obviously, the applicant has been less than honest with the Corps, or the public, or both. Little wonder that the applicant's credibility is so low. This lack of honesty casts doubts on the accuracy of any statements and/or promises made by the applicant.

Comment CRG-53:

The lack of data in these sections indicates the applicant had no interest in exploring other sites. This is a violation of the EIS requirements. Not only must the applicant be required to consider other sites, it must do so in detail. And, when comparing costs, total costs, including the social costs traditionally borne by the public, must be included. As other "brownfield" areas already have the infrastructure that is needed, total costs might well be lower at an alternative site. Construction of this plant in this area is also contrary to the policy of encouraging industrial growth in urban areas announced by Mr. Carter, President of the United States. Construction here would encourage further deterioration of the metropolitan areas of Northeastern Ohio. If the company continues to insist on the Conneaut location at the very least the applicant must be forced to assume all costs associated with the development resulting from construction/operation of the proposed facility. It is the very least that a "good neighbor" would do.

Comment DW-28:

For the reasons listed above the Down Wind Neighbors group believes that the public interest can best be served by preventing U. S. Steel from building its proposed Conneaut mill. This is one of the first corporate decisions to move out of heavily,

industrialized urban areas into rural and undeveloped ones because of the cost of pollution abatement at existing sites is too high. In Environmental Steel by James Cannon states "if the cost of pollution control were to be passed on totally in the form of higher prices, this would cause an annual increase of approximately $5.00 in the cost of a large automobile containing two tons of steel.) (p. 15) Edgar Speer in the September 12, 1977 issue of Iron Age, a trade magazine, said that we are "flushing the idea out" about the construction of greenfield sites as opposed to brownfield sites. U. S. Steel's massive attempt to degrade our environment and abandon urban areas is unconscionable. These urban areas already possess the necessary socioeconomic infrastructure to support a steel industry. Morality and commitments to already developed areas must be essential factors in any corporate decision.

Comment DOC-5:

Page 6-11, paragraph 2. The applicant states that the Corporation does not own a single contiguous land tract on the Great Lakes which is large enough to serve the needs of the proposed steel plant. Therefore, the applicant has narrowed the analysis of alternative sites to those where existing steel plants are already in operation. We do not agree that only those sites owned by the applicant can be considered as alternatives. Tracts other than those owned by the applicant should be sought and considered as possible alternatives to the proposed site.

Comment EPA-48:

Should this occur it is recommended that the plant be located at some other site. Site investigation should not be restricted to areas owned by U. S. Steel. Alternatives in this vein would include upgrading existing U. S. Steel facilities, locating the plant at an existing abandoned industrial facility, or relocating to a previously undeveloped site of less environmental sensitivity.

Comment FWS-64:

Paragraph 6.17, page 6-12 - Available information is totally inadequate to assess the viability of the Texas site. Major potential environmental problems that could be associated with development of this site should be outlined in the greatest detail.

Comment JB-12:

I urge you not to issue this permit to U.S. Steel. Surely there is a more suitable location for this mill.

Comment LPT-1:

Considering the impact of such a plant on the area, I cannot see any benefit to a greenstone plant. If U.S. Steel wants to damage an area by constructing a new plant, why don't they select one of their current plants that is being closed due to its older, less efficient processing methods. If this were done, our area would not feel the ill effects of the new plant, instead an old, out-of-date plant would be replaced by an up-to-date one, and the work force could remain at its current location.

Comment LWV-2:

We also urge that there will be a thorough review of the alternatives where there are detrimental aspects in reality. We urge that the long-term impact be weighed heavily.

Comment MAE-3:

It should be pointed out that the D.E.I.S. analysis assumes that the facility is one of capacity expansion in nature rather than replacement. Given the degree of obsolescence of many existing steel plant facilities and the historic pattern of over capacity in the industry, there is good reason to question this assumption. If the assumption is wrong then secondary impacts of the proposed mill would be greater due to a higher rate in-migration. On the other hand, such a case would, to some extent, reduce the anticipated drain on the local labor market. We request that the Corps confirm this assumption and if necessary provide more detail and alternative scenarios. The experience of Erie industry suggests that movement of hourly workers to the Erie area is minimal even with an extensive recruitment effort. The E.I.S. analysis should address this problem.

Comment PFC-35.

The section on alternatives is very unsatisfactory. In fact, there are no real alternatives given. When a so-called alternative is given and then U.S. Steel says that this "alternative" cannot be used, it is not really an alternative. Webster defines alternative as "offering or expressing a choice." If only one way is acceptable to U.S. Steel, there is nothing presented from which to choose.

Comment PHCOE-17:

"Is it in the public interest to - - is it in the public interest to grant permits that, in effect, construct a facility which violates the spirit of our urban policy."

Comment RB-9:

The land for the proposed mill could be sold and the money used to purchase land in an area more conducive to industrial development. Allowing the plant to be constructed in the area now designated will add to urban as well as rural decay, for existing U.S. Steel Plants will be closed in Pittsburgh and Youngstown and the new mill will provice only one new job for every three eliminated elsewhere. The employment boom seems unlikely when all factors are considered.

Comment RK-3:

U.S. Steel has many operating facilities sitting idle, they also operate with a very low ratio of production verses man hours. Rather than construct another inefficient facility, shouldn't or wouldn't it be more logical to clean up and maximize the efficiency of its existing facilities?

Comment OSC-2:

Second, the Conneaut site does not have near at hand the social and economic infrastructure needed for, first, construction, and thereafter, operation of a facility of the magnitude that U. S. Steel is proposing. The Sierra Club believes that new steel mills belong in areas with a steel-making tradition, thus eliminating the necessity of dislocating large segments of the work force and their families, of duplicating homes and streets and schools and parks and sewers for these people. A full accounting of the costs to the total elimination of the activities now performed by the land at the proposed site and in the adjacent agricultural counties, and in the reduced usefulness, through reduction, or perhaps abandonment, of steel-making in Youngstown and Cleveland, Ohio, in Gary, Indiana, or in Pittsburgh, Pennsylvania. These standing cities represent the investment, through taxes on their earnings, of earlier generations of steel workers, and these are the towns where, in the event of some future cyclic cutback in steel production, there is the likelihood of creating new ghost towns. The "greenfield" concept, as applied at Conneaut, would lead to severe "boom town" dislocations in the city itself and in surrounding townships and counties, while hastening the obsolescence of present steel-making communities.

Comment OSC-3:

We feel that insufficient consideration has been given to the adverse environmental effects over the full region that would be affected, beyond the three adjacent counties. Although we have heard the applicant, U. S. Steel, maintain that other plants will not be abandoned so long as they remain "profitable," we believe that evaluation of the proposed project must address this possibility, that existing plants may well become "not profitable" when capital for maintenance and for modernization is diverted to the new project. Thus, the possibility that the project in Conneaut will have an impact upon the environment in these other areas where such abandonment may occur is strong, and the Sierra Club believes that it should be evaluated. Furthermore, there is now available a substantial body of scholarly information which indicates that the direct cost to the private industry is also less, when expanding capacity through "brownfield" development than when attempting to increase capacity with "greenfield" facilities. (See, for example, INDUSTRY WEEK, May 15, 1978, p. 74, and recent work by Chase Econometrics, and by M.I.T. for the Office of Technology Assessment.)

Comment OSC-4:

When a corporation as large as United States Steel proposes to construct a facility with a production capability that represents a significant fraction of the nation's total steel output, then it is appropriate for the government and the nation, in order to determine the public interest, to participate in considering alternate locations for the facility. This analysis should be carried out in consideration of world market needs, of existing infrastructures, of sources for the work forces, of the "minimum task energy" to achieve the desired goals, of the various subsidies that would be provided from the public sector for the different siting and transportation alternatives. For these reasons, the Sierra Club believes that a disclosure of all information and factors relevant to consideration of alternative siting of the project, and specifically relating to the current debate of the "brownfield versus greenfield" issue is required here, for conformance with the mandates of the National Environmental Policy Act.

Response A-4, A-22, A-24, CON-11, CRG-7, CRG-52, CRG-53, DW-28, DOC-5, EPA-48, FWS-64, JB-12, LPT-1, LWV-2, MAE-3, PFC-35, PHCOE-17, RB-9, RK-3, OSC-2, OSC-3, OSC-4:

During the month of December 1978, the Corps of Engineers secured the services of a consulting firm to objectively analyze the alternative plant sites suggested by the U.S. Steel Corporation and to identify and evaluate other potential brownfield and greenfield sites within the market area of the proposed Lakefront plant. Accordingly, the alternative sites section of Chapter Six of this final EIS has been subdivided into three separate parts - namely the Applicant's Original Proposal, Applicant's Revised Proposal; and Staff's Analysis of Alternative Sites.

Comments CRG-53 and PHCOE-17, among others, indicate that the proposed project violates the spirit of the President's urban policy. In response to this comment as well as several others of a similar nature, representatives of the Federal Regional Council were asked to evaluate the overall proposal to determine if it was compatible with established policy. On 11 October 1978, Thomas C. Maloney, Chairman of the Mid-Atlantic Federal Regional Council, advised the Corps by letter that the proposed Lakefront plant was consistent with the goals of the President's national urban policy. The reasons cited by Mr. Maloney are as follows:

"1. The West Springfield, Pennsylvania/Conneaut, Ohio, location is within the traditional Pittsburgh-Great Lakes 'steel belt.' The applicant's proposal does not threaten to cause a migration of the steel industry from its traditional production region.

2. The economic development in Erie and Crawford County, Pennsylvania, and Ashtabula County, Ohio, which would result from the construction of the proposed mill would be focused in an already urban area where the principal economic center is the City of Erie, Pennsylvania.

3. The applicant intends to produce steel which would be shipped for further processing to its other plants located in or near large urban areas such as Pittsburgh, Pennsylvania, and Chicago, Illinois. For this reason, construction of the proposed steel mill would tend to strengthen the employment and economic bases of such major metropolitan areas.

4. The applicant intends to produce flat and plate steel at the Lakefront plant. Approximately 80 percent of the national market for such steel products is now located in the industrial belt stretching from Pittsburgh, Pennsylvania, through Cleveland, Ohio, and Detroit, Michigan, to Gary, Indiana--Chicago, Illinois. For this reason, construction of the proposed mill would tend to strengthen the employment and economic bases of these major metropolitan areas.

5. The applicant cannot construct the proposed facility at the site of one of its nearby existing mills because the land area required is not available and because needed shipping facilities would be more expensive. The only available alternative sites are distant from the traditional 'steel belt.' Construction of a new mill at one of these distant sites would tend to contribute to dislocation in steel and steel-consuming industries from existing manufacturing-based cities.

6. Inability of the applicant to construct the proposed mill could weaken the competitive position of the American steel industry. In turn, a weakened domestic steel industry could contribute to severe losses of employment and other economic activity in major industrial cities."

A copy of the letter from the Mid-Atlantic Federal Regional Council is appended to this final Environmental Impact Statement.

Comment A-5:

Could it be that the only real economy to this applicant would occur as a consequence of its ability to escape costs of environmental clean-up at existing facilities by the process of relocation rather than repair? If this were the case, it points again to the question that this large company may not be serious in its responsibilities to communities that had previously committed their manpower and environmental resources to steel industry.

Response A-5:

Costs associated with the reduction of emissions and wastewater discharges at existing facilities would not be circumvented by constructing a new plant. The applicant's program to improve existing facilities would continue whether or not the proposed Lakefront steel plant is built.

The applicant acknowledges that it has responsibility to communities that have previously committed their manpower and environmental resources to the steel industry.

Comment A-6:

Permit for waste discharge facilities into Lake Erie. According to the DEIS, Ohio water quality standards would not be met for the water discharge content in phenols and dissolved solids. More than one quarter of a mile from the parameter of this discharge facility, the concentrations of these materials would again be within the limit of what some persons believe to be adequate quality. This does not mean that these materials would have disappeared. They would simply have been diluted in concentration; the ingredients would still be present. If they can be diluted, they can also be concentrated as, for example, in a biological chain.

Comment A-8:

We are further told that the content of phenols in the discharge water would be innocuous because its concentration would be no higher than in saliva. According to the DEIS (Table 4-277, P. 4-596, Vol. 3), the concentrations in discharge would be 56 fold greater than in the typical intake water at the best and 166 fold greater than in the typical intake water at its worst. Even if saliva did contain the same concentration of phenol as would this waste discharge allocation--50 million gallons of saliva per day--for this is the volume of discharge sought in these permits--would require a great deal more spitting than even the applicant, together with all its workers and the 10 million persons who live in the basin, can produce. (Discharge flow 2,181.7 liters/sec; 578.7 gal/sec). No, I do not believe that any of the gentlemen from the consultant firm of Arthur D. Little or the applicant firm would volunteer to ingest the phenol which has been condensed into a single glass of water from the discharge of even one minute of this stupendous volume output. The key in this issue is the total content of toxins to be discharged -- not simply the concentrations.

Response A-6, A-8:

The issue raised in one of these comments concerning the "innocuous phenol concentration in the discharge" pertains to statements made by the applicant during Corps public hearings and cannot be construed as representing the analysis made by Corps staff. On the contrary, the draft EIS indicates that the phenolic discharge is not predicted to meet water quality standards for Ohio. The USEPA concurs that water quality violations would occur and has advised the Corps that a discharge permit cannot be issued to a facility where violations in water quality standards will result. Therefore, the proposed effluent limitations and/or discharge port design must be altered to achieve existing water quality standards. The specific means to achieve these standards will be defined during NPDES permit review.

The total content of toxins to be discharged is regulated under provisions of the Federal Clean Water Act. The Ohio NPDES permit regulations, adopted in accordance with requirements of Section 402 of the Act, state that authorized discharge levels specifying the average and maximum daily quantitative limitations must be defined. Where appropriate, the discharge levels are characterized to the extent possible in terms of volume, weight in pounds per day, duration, frequency, and concentration. Reduction in the quantity of discharged chemicals is achieved through effluent limitations, Best Available Demonstrated Control Technology, and Standards of Performance for New Sources, and is further controlled through water quality standards.

Present technology does not allow for total recycling with "zero discharge" and thus discharge concentrations are critical. Concentrations, among other factors such as duration of exposure, the particular species involved, water temperature, pH, dissolved oxygen content of the water, etc., are extremely important in determining the effect of a particular pollutant on fish and wildlife values as well as the human health and welfare. Toxicity to aquatic life is generally expressed in terms of acute (short-term) or chronic effects (long-term). Acute toxicity refers to effects occurring in a short period of time, often death is the end point. Acute toxicity can be expressed as the lethal concentration or the tolerance limit for percentage of population. Chronic effects may be expressed in terms of an observation period equal to the lifetime of an organism or to the time span of more than one generation.

Chronic effects often occur in the species population rather than in the individual as edge. The phenomenon of bioaccumulation of certain materials may result in chronic toxicity to the ultimate consumer in the food chain. The draft EIS (Chapter Four) addresses acute and chronic toxicity and bioaccumulation based on the present state of knowledge, and thus does not insinuate that pollutants disappear.

The USEPA has advised the Corps that the primary toxics control technology likely to be applied at the proposed Lakefront plant is undergoing toxicity and bioaccumulation tests at two other U.S. Steel mills. The agency further indicates the likelihood that it and/or the States will include periodic sampling to find instances of bioaccumulation, if they occur.

Comment A-7:

Life of fish may be taken as a measure of health. Without a guarantee by the EPA and the Corps that spawning grounds for fish would not be destroyed downwind of the proposed discharge facility, there is no basis for a discharge permit. For if this life cannot be sustained in the region, then ultimately we who drink the water and who are by body composition greater than 70 percent water would have to share the problems of the fish. When this issue was raised at the Conneaut hearing, the response generated was that the fish would not be destroyed but that they would have to relocate. What a kind way to consider the consequence to these natural and commercially important spawning grounds.

Comment OW-23:

7. Water emissions from the plant will be significantly different from the present state of the lake. These figures are listed in DEIS p. 4-593 and 4-594. For example:

Temperature - winter temperature during the worst case will be 68 degrees F. versus normal water temperatures of 32 degrees to 33 degrees F.

Ammonia - presently existing in the lake - 0.04 mg/l - steel plant emission 0.96 mg/l - thus an increase of 400 percent.

Cyanide - presently existing in the lake - 0.0004 mg/l - steel plant emission 0.13 mg/l - or an increase of almost 3000 percent.

These emissions will have serious environmental consequences for the immediate aquatic environment. Fish populations in the area will decrease sharply and drastic losses of prime spawning areas will occur.

Comment EDM-1:

First, the ichthyological interests, we are sure will be greatly effected by the Mills's location on Lake Erie namely the commercial fishermen or fisheries and the recreational fishing; what will happen to the perch and the wall-eye or yellow pike that commercial fishermen rely upon for their livelihood or the small mouth and large mouth bass and other game species that inhabit the Lake and that give so much pleasure to the anglers in the area?

Comment EDM-2:

It is said some fish will be killed by the effluent flowing back into Lake Erie from the Mill even if they say some, it is almost assured that many more fish will be killed of all species.

Comment EDM-3:

Then, we have the Salmonoid Family of which the Chinook and Coho belong, and which are propogated at Elk Creek by the Pennsylvania Fish Commission for anglers, isn't it somewhat foolish to keep conducting the Hatchery when the fish will be killed?

Comment KEE-4:

Water pollution and fish kills would result from the construction and operation of the plant. The intake tube providing water for the steel mill would trap small fish and fish larvae. The blasting required for construction of the intake and discharge pipes would cause fish kills and probably the temporary abandonment of the area by various species. The construction at Turkey Creek and Conneaut Creek would "release heavy metals and nutrients into the water column and could cause fish kills..." The discharge from the plant would dissipate part of the excess heat generated during operations, possibly causing thermal pollution. The effluent could have toxic effects on fish. For example, the discharge is expected to contain 1 to 2 micrograms of residual chlorine per liter. The worst case concentrations of this chemical would be about 4 micrograms per liter (4 ug/l). The E.P.A. criterion is 10 ug/l for most fish. For salmonid species it is 2 ug/l. Even after mixing with other waters, the average discharge would contain residual chlorine concentrations very near the allowed limit for trout and salmon.

Comment JW-2:

2) Recreation areas such as Presque Isle State Park will become contaminated with effluent because of the prevailing west to east current in Lake Erie. Game fish populations will diminish along with water quality. Destruction of Turkey Creek is just the beginning of environmental devastation to the area.

Comment PFC-5:

Page xiv (21) (22). These could adversely effect both the sport and commercial fisheries in Pennsylvania waters because of the prevailing lake currents.

Comment RW-3:

After a long seige of fighting the deterioration of Lake Erie, it now appears that lake is making a come-back. The water quality has definitely improved, it is clearer

and cleaner now than it has been in a long time. The commercial fishing industry is beginning to come back and is enjoying moderate success. Recreational boating has been increasing each year. Sport fishing has seen drastic improvements in the last few years. But, most importantly, it has remained our number one source of drinking water. Should the proposed plant be built all of these may become threatened. Effluents and water run off from the proposed plant although treated will be released directly into the Lake, most likely causing adverse effects or water quality and marine life. During the construction phase, dredging activities and blasting will cause killing of fish and destroy spawning grounds, thus doing irreparable damage to commercial and sport fishing.

Response A-7, DW-23, EDM-1, EDM-2, EDM-3, KEE-4, JW-2, PFC-5, RW-3:

The primary control technology used at the proposed plant would be derived from data collected on toxicity and bioaccumulation at two other U.S. Steel Corporation mills. In addition, the applicant has also collected some baseline data on toxic residues in fish and expects to perform additional monitoring as the facility is completed and phased into operation. It is probable that studies would also be conducted by the USEPA and the States of Ohio and Pennsylvania to determine whether instances of toxicity and bioaccumulation can be correlated with plant operations.

Potentially toxic substances in the effluent of the proposed Lakefront plant would be present in low concentrations. Incorporation of a high energy diffuser system into the discharge pipeline would insure rapid mixing dilution and subsequent assimilation of the chemical constituents present in the effluent. The applicant has investigated the possibility of water supply contamination and concluded that toxic substances discharged would not be detectable at any of the potable water intakes in the vicinity of the Lakefront plant site.

If any parameter is found to be present in the plant effluent at concentrations considered potentially harmful by the USEPA, the applicant would effect the necessary treatment to reduce the concentration to acceptable levels.

Both the Ohio Environmental Protection Agency and the U.S. Environmental Protection Agency are responsible for regulating industrial point source discharges that would be produced by the Lakefront plant under the NPDES permit program. During the review of the permit application, effluent limitations will be established to achieve compliance with water quality standards through the application of control systems that represent Best Available Technology.

Prior to reaching maximum production capacity, the applicant will be required to submit reports which contain the daily monitoring results for the plant discharge. From these data, the above agencies will determine if the final effluent limitations are achievable when the plant attains production capacity. The NPDES permit will also contain a schedule for compliance with final interim effluent limitations as well as interim limitations as various process units are brought on line. Both the USEPA and the State of Ohio have the authority to take enforcement action should a violation of effluent limitations occur.

In addition to water quality, the NPDES permit review will also consider entrainment and impingement impacts resulting from operation of the intake structure. Accordingly, the USEPA has notified the applicant that additional ichthyoplankton studies will be required to more precisely locate the optimum placement of the intake structure. Identifying the zone of minimum concentrations could substantially reduce entrainment impacts discussed in Chapter Four of the draft EIS. Further, EPA has indicated that wedgewire screens, or an equivalent type of structure, would need to be placed over the intake ports. These structures are presently considered the best available technology for reducing impingement impacts. If the mesh size is small enough, entrainment of ichthyoplankton may also be reduced as a result of uniform flow velocities induced by the screen. Additional information on the intake screens planned for the Lakefront facility is presented in Chapter Four of this final EIS.

Comment A-8:

Refer to A-6

Comment A-9:

Many of the pollutants that may be present in wastewater from a steel mill are known or suspected carcinogins, i.e., agents capable of inducing cancer. There is likelihood not only that these would impact Erie's water supply but also that of Conneaut which is less than two miles from the discharge facility itself. The need to determine this potential impact prior to issuance of permits is clear.

Comment CPA-1:

One of the most important assets of this community is the readily accessible and seemingly inexhaustible supply of quality fresh water. Around the world today, indeed, literally around the corner, as for example, in Albion, Pennsylvania, one sees the need and value of large supplies of life-sustaining water and the disasters that can occur without it.

We believe this number one asset would be seriously threatened by the nearness of the applicant's planned discharge facilities. Although the prevailing surface currents are southeasterly and generally away from our water treatment facilities, it is common knowledge to anyone living along the lake that where surface currents go in one direction, bottom currents will flow in the opposite direction. This simply means that the bottom currents would bring the pollutants from the discharge westward toward our water plant. Furthermore, even if this were not the case, evidence clearly presented to us by the disposition of drift materials indicates that in times of major storms, winds from the northeast can result in a shift of water from the east side of this community to the west side. A precise plan monitoring the discharge effluent and its accumulation and directing flow has not been addressed in the DEIS. The mere dilution of these toxins does not imply that they have dispersed or that they are at a safe level for human consumption. In fact, we would raise the question of a possible buildup of toxic organic chemicals during times of stagnation. It should be emphasized that the present location of the discharge facilities would be less than two miles from our intake water treatment plant.

Comment CPA-2:

The DEIS in no way assures us that there would not be an increase in content of toxic material in our drinking water, and a need for more complex filtration equipment. If the latter were the case, who should bear the cost, the citizen of the community, or the applicant who causes the need?

Comment E-3:

We stress the need for proper and vigorous monitoring of the plant effluents and their effect on Lake Water and the Air Basin when the plant will be in operation.

Comment E-6:

The discharges of pollutants from the plant may deteriorate our raw water supply thus requiring considerable capital expenditures and operating expenses in order to provide quality potable water for our citizens. The nature of pollutants and unknown effects that may result from the anticipated discharges necessitate the installation of a number of all-weather sampling stations and adequate laboratory facilities for analysis. One sampling station may be located one-half to one mile offshore at the foot of Avonia Road. The results may then be compared with the data on raw water quality that has been gathered by the city of Erie Water Bureau over the last decade. All costs for such sampling and analysis must be borne by someone other than the city of Erie.

Comment EDH-22:

Table 1-29 (1-241, 1-242) If any or all of these chemicals are in the water, what steps will be taken to prevent bioaccumulation in fish or damage to the city of Erie Water Treatment Plant? Perhaps we should require carbon filters or some similar procedure to eliminate organics at the source, rather than try to play catch up later on.

Comment KE-2:

One of my main concerns is the water quality impact. With the Great Lakes serving as somewhat of an industrial sewer for America's Manufacturing Belt, I'd rather not see any more dangerous (such as in Tables 1-26, 1-28) chemicals discharged into Lake Erie. Conneaut and Erie are already downstream from several industrial centers, notably Cleveland and Detroit, and as you may know, the Great Lakes area has been shown to have a high incidence of cancer (which many believe to be environmentally induced). This impact concerns me more than the enhanced eutrophication of Lake Erie that is predicted by the DEIS. As the man from the EPA remarked at the Erie meeting, the eutrophication caused by the plant directly and indirectly would be but a "drop in the bucket" for a lake whose accelerated aging is thought to have been arrested (or nearly so).

Unless I misunderstand the proposals, I think it is a very poor idea for the U.S. Steel plant to be built and in operation, and then to build a monitoring station at the city of Erie's water intake. This seems to me rather like buying fire alarms just after you've given some matches to an arsonist.

Comment KEE-6:

Water draining from roadways would contain lead and sulphur emissions from automobiles. This pollution would be proportionate to the population increase and greater use of highways in the area. Offhand, I cannot think of a lake tributary which is not crossed by Interstate 90, Route 20, or Route 5. The concern over the discharge from the plant has caused officials of the city of Erie to urge the construction of water monitoring stations. While the water currently used by the city is relatively clean, operation of the mill might require the city to consruct additional purifying mechanisms. Concern for the qualit of water on Presque Isle beaches has also been voiced. Last, many persons feel that the quality of fishing in Lake Erie will decline if the plant is allowed. Roger Kenyon, a biologist for the Pennsylvania Fish Commission, has stated that fish kills from the plant would be a "foregone conclusion." He disagreed with the evaluation of this area of the lake in terms of use as a spawning area, and remarked that the lake waters from the Ohio-Pennsylvania line to Dunkirk, New York, were a fragile area containing nursery and spawning grounds for several species. He was most concerned with the possible damage to yellow pike, though it is known that the effluent would affect lake trout, perch, and other fish as well.

Comment RB-6:

Contamination of the public water supply is in my opinion one of the most serious problems posed by construction of the proposed Greenfield Mill. A certain amount of all chemicals discharged will find their way into public water supplies, and the effect of these contaminants on the health of local resident is impossible to predict over a long period of time. One case in point are the phenols, which form health-threatening substances when combined with chlorine. I wish to underscore the seriousness of this problem, for such discharges will threaten the health of any resident whose water supply is drawn from the lake. If the volume of this discharge is underestimated, all of the problems mentioned thus far will be magnified. There are also effects which are impossible to foresee before the plant is in operation, but which will be extremely difficult to correct after manufacturing begins at the site.

Response A-9, CPA-1, CPA-2, E-3, E-6, EDH-22, KE-2, KEE-6, RB-6:

Potentially toxic substances in the effluent of the proposed Lakefront plant would be present in low concentrations. Incorporation of a high energy diffuser system into the discharge pipeline would insure rapid mixing dilution and subsequent assimilation of the chemical constituents present in the effluent. The applicant has investigated the possibility of water supply contamination and concluded that toxic substances discharged would not be detectable at any of the potable water intakes in the vicinity of the Lakefront plant site.

If any parameter is found to be present in the plant effluent at concentrations considered potentially harmful by the USEPA, the applicant would effect the necessary treatment to reduce the concentration to acceptable levels.

Both the Ohio Environmental Protection Agency and the U.S. Environmental Protection Agency are responsible for regulating industrial point source discharges that would be produced by the Lakefront plant under the NPDES permit program. During the review of the permit application, effluent limitations will be established to achieve compliance with water quality standards through the application of control systems that represent Best Available Technology.

Prior to reaching maximum production capacity, the applicant will be required to submit reports which contain the daily monitoring results for the plant discharge. From these data, the above agencies will determine if the final effluent limitations are achievable when the plant attains production capacity. The NPDES permit will also contain a schedule for compliance with final interim effluent limitations as well as interim limitations as various process units are brought on line. Both the USEPA and the State of Ohio have the authority to take enforcement action should a violation of effluent limitations occur.

The information regarding the potential for current reversals in the nearshore areas of Lake Erie is acknowledged. Studies conducted by the applicant indicate that westerly longshore flow in the Conneaut area occurs approximately 25 percent of the time.

Data collected by the Federal Water Pollution Control Administration (now EPA) and during Project Hypo (a joint study by the USEPA and the Canadian Centre for Inland Waters) show that water movement in the general vicinity of the drinking water intake is toward the discharge for the proposed Conneaut Lakefront plant. Other studies conducted by Aquatic Ecology Associates indicate that subsurface currents are predominantly toward the east of northeast.

The impact of lead and sulfate emissions from automobiles is primarily an air quality problem. Corps staff is not aware of any studies which would indicate that these pollutants tend to concentrate on road surfaces.

Comment A-10.

A serious question can be raised that a major reason for relocation of facility from sites such as Youngstown may not reside in economic consideration so much as in anticipation of future environmental regulations pertaining to water quality control. For it is obvious that waste discharge allocations cannot be as effectively diluted and hence hidden in the Mahoning River as they could be in the whole of Lake Erie. The importance of the lake as a major resource for water, industry and recreation and the particular vulnerability of this great lake render it imperative that no backward step in clean up occur--that dilution not be permitted to hide pollution. One way around this issue is to require 100% recycling utilizing filtration apparatus and cooling ponds. This would obviate the additional economic burden of precise monitoring and enforcement systems. Neither of which have been adequately addressed in the DEIS.

Comment EPA-142:

We do not believe the full 1.95 flow factor for coke plants would apply here, but this could probably be best resolved as part of the NPDES permitting process, as should other discrepencies in guidelines parameters, i.e., flows for steelmaking, sintering, hot forming, etc.

Comment MM-4:

U.S. Steel should have self contained water storage tanks for their needs instead of polluting Lake Erie.

Response A-10, EPA-142, MM-4:

Dilution of pollutants generally infers that no treatment is provided for waste effluents since they are merely allowed to dissipate in the water column. Regulatory agencies have recognized long ago that waste water treatment and compliance with existing water quality standards is a much more effective control mechanism than dilution. The applicant will be required to employ the most advanced and up-to-date treatment technology throughout the Lakefront facility. If the applicant had intended to reduce pollutant concentrations through dilution, then it would follow that recycling at the proposed plant should be minimized to increase the flow through the discharge. Obviously, this is not the case, since the applicant has already indicated that approximately 95 percent of the water used in this facility would be recycled. To date, no system has been advanced in the steel industry that permits recycling of 100 percent of the water. The systems proposed for the Lakefront plant represent the best available technology as defined by the USEPA. If, prior to the start of construction of the plant, technology evolves which increases the recycle efficiency of any of the proposed systems, EPA will require the applicant to study those systems and, if the increased recycling efficiency is demonstrated, to install the most efficient system.

A system of self-contained water storage tanks is not a known technology for water recycling. In regards to effluent discharge effecting Presque Isle waters, NPDES permit restrictions administered by Ohio EPA should insure that the quality of Lake Erie water is not adversely effected.

The flow factors for steel plant process operations are predicated on conventional design parameters, but could require modification based on the various design features incorporated in the process facilities planned for the proposed plant. The final engineering designs to be submitted in the NPDES permitting process will enable appropriate adjustments to be designated.

Comment A-11:

A completely closed recycling system--as I understand it--is feasible and currently in the process of being planned by the Japanese steel industry. In point of fact, the

final EIS should contain a comparison of waste water allocation from such competitive facilities as the Kimitsu Works in the south of Tokyo and the Ohita Works located in the southern section of the Kyusha Island. The EIS should also include for comparison purposes the degree of water recycling and discharge in the best of the new Japanese facilities. My understanding is that the Kimitsu Works which now produces 7-8.5 million tons of steel annually has a daily discharge in total suspended solids of only 400 Kgm as opposed to 1260-3630 Kgm/day for the proposed plant. The issue of chemical oxygen demand imposed by the solute in waste discharge is critical to survival of fish life. In the case of the Kimitsu Works this is said to be less than 2 ppm. I believe this issue is not at all addressed in the DEIS, at least not within the data presented in Table 4-277, Vol. 3, P. 593-94. Let us hope that within the above figures are hidden substance or matter not to be substantiated upon close scrutiny—otherwise how sad that our governmental agencies stand before the public decreeing waste load allocations and proclaiming as best available technology that which may already be behind the present generation of the technology of our foreign competition.

Comment DW-41:

(c) There is also no mention of recycling water. Apparently the availability of water supersedes any attempts to recycle water, which would spare the lake from any pollution. Water recycling technology is available and used in the U.S. and elsewhere in the world (esp. South Africa). Armco Steel is a good example of a major steel company which uses recycled water.

Comment PHCOE-33:

"There is also no mention of recycling water."

Comment RB-7:

Means do exist to eliminate these problems. Coke ovens could be eliminated and replaced by the arc weld system of steelmaking used by the Japanese. After all, one factor which allows the Japanese to be competitive on international markets is the efficiency of their steelmaking process. Another solution would be the construction of a self-contained water recycling system for the mill, thereby eliminating the continual discharge of heated and polluted water into Lake Erie.

Response A-11, DW-41, PHCOE-33, RB-7:

The applicant recognizes that a substantial percentage of intake water can be reasonably recycled and states that the proposed plant will recycle water in amounts equivalent to or better than that provided by any water recycling technology available in the United States or elsewhere. The information presented in this EIS on water flows define the extent of the proposed recycling plan.

The proposed Lakefront steel plant would recycle nearly 95 percent of its process and cooling water by employing the advanced technology currently in use at the applicant's Fairfield Works in Fairfield, Alabama. Water use at this facility can be divided into three distinct categories. closed system cooling water, indirect cooling water, and direct contact process water. The recycling plan for these activities involves the continuous use and circulation of water at the rate of 185,000 m^3/hour (815,000 gpm).

The closed-loop recirculating cooling water system consists of about 12 percent of the circulating water or 22,200 m^3/hour (97,800 gpm). A small quantity of the blowdown is discharged and made up with freshwater to prevent the build up of additives.

The indirect (noncontact) cooling used throughout the various plant process operations is estimated to be about 48 percent of the water in circulation or 88,000 m^3/hour (391,000 gpm). Passage of this water through cooling towers resuls in an evaporative loss of 3,700 m^3/hour (16,300 gpm) to the atmosphere. Approximately 6,700 m^3/hour (29,400 gpm) is blown down system wide to control the concentration of dissolved solids (salts).

Process water or direct contact cooling water amounts to about 40 percent of the total plant usage or 74,000 m^3/hour (326,000 gpm). Blowdown in this category is approximately 4,400 m^3/hour (19,400 gpm) and includes the 500 m^3/hour (2,200 gpm) of potable and plant service water utilized on a once-through basis.

In summary, the total waste water discharge from these three sources amounts to approximately 5.8 percent. Based on the amount lost, the overall effective rate of recycle is more than 17 times. If the evaporative losses from the cooling towers are considered, then the recycle rate is slightly less than 13 times.

As technology progresses, more efficient recycling systems are expected to evolve. To date, however, there is no system that permits 100 percent recycling of water. Those that are available require some amount of blowdown to prevent corrosion and the formation of scale which reduces the efficiency of the system. Procedures need to be developed to remove accumulated compounds dissolved in the water to prevent uncontrolled deposition or corrosion of the water circulating system. To date, no effective methodology for removal of dissolved solids is known to be available.

The degree of recycling that can be achieved also depends on the manufacturing process and its rated production capacity. For example, the Armco Sand Springs Works in Oklahoma is able to reuse water to a greater extent because the major water using process units and cooling systems proposed for the Lakefront plant are absent from this facility. However, the recycling efficiency of this plant is no greater than that permitted by the current state-of-the-art technology.

Additional information on the recycling capabilities are contained in Chapter One of this final Environmental Impact Statement.

Comment A-12:

Since the plant facility has been proclaimed to contain best available technology the final EIS should address a comparison of all pertinent technologies inside and outside of the country, not simply that which is defined by the EPA as best available technology. Wasteload allocations should be zero in all potentially harmful solutions.

There should be no compromise in the quality of this region's water. We can be expected to settle for nothing less.

Comment ADN-4:

4. Discussion of alternative waste water treatment with an eye to alternate selection of that alternative which assures maintenance of high water quality standard is needed.

Comment ADN-5:

Alternative methods of water intake which includes other methods for cooling is needed.

Comment AHC-6:

6. More specifically, how does the applicant account for instances where the pollution loads anticipated for several process in the proposed mill exceed those reported from foreign countries, especially the newest mills in Japan?

Comment EPA-136:

On page 4-598, it is mentioned that the water use at the USSC Fairfield Works is about 2,860 gallons/ton while that expected at the Lakefront Plant is 3,430 gallons/ton (20 percent higher).

No explanation is given why Fairfield has a better water use rate. Should not Conneaut, with the most modern systems available, be expected to discharge less wastewater per ton of steel produced, especially when significant impacts are expected as a result of the discharge? Are there any major differences (product lines) that account for the higher consumption of water? Conservation of water at Conneaut could result in a lower pollutant discharge rate.

Response A-12, ADN-4, ADN-5, AHC-6, EPA-136:

A cursory examination of the water use rate at the Fairfield Work: shows an apparently lower usage than has been projected for the proposed plant. However, there are significant differences that should be noted between the two plants. For example, some of the production attributed to the Fairfield Works has been accomplished at other nearby plants. Each of these plants discharged its wastewater to a different water course. Hence, the reported discharge rates for the Fairfield Works do not account for total discharge flows.

Most important, from the point of establishing allowable water use rates, is the significant difference between observed water usage based on actual flows and projected water usage based on hypothetical guidelines. The water flows at Fairfield when correctly attributed to specific process steps and technology represent actual flows being obtained in practice. The water flows for the proposed plant have been projected by using maximum guideline flow rates simultaneously for all processes so that the maximum effect would be known and to avoid any understatement of the potential impacts. All processes would not simultaneously discharge at their respective peak rates so discharge at the cumulative guideline maximums would not be a likely occurrence.

References have been made regarding documented effluent loadings in wastewater discharges at lesser rates than are expected for the proposed plant. The applicant will be required to apply appropriate engineering procedures to decrease the effluent loadings so that the environmental regulatory standards are satisfied. The actual levels to be attained will be determined during final engineering design of the facility and by the effects of the specific operating practices employed.

Establishment of the Best Available Technology requirements is wholly within the regulatory authority of the USEPA and appropriate State agencies. Should these agencies determine during the NPDES permit review that a demonstrated technology is available and is necessary to insure the achievement of water quality standards, they will consider imposing limitations on the effluent to insure that the system or its equivalent is used.

In regard to any differences between the applicant's projected effluent loadings and the reported data or effluent loadings at foreign plants, it is necessary to have extensive engineering information about the facilities, equipment, and operating practices at the plants in question to initiate any meaningful analysis. Additionally, it is more difficult to obtain accurate data from plants overseas than to obtain such data from domestic plants.

The applicant has been unable to locate any information which would indicate that the pollution loads anticipated for the Lakefront mill are higher than those reported in foreign countries. Interpretation of data derived from other sources must be conducted very carefully. In instances where net and gross values are compared, a wide discrepancy may seemingly result when in actuality the gross and net values are equivalent. Moreover, the Kimitshu Works in Japan was visited this past year by two representatives of the U.S. Steel Corporation. While their visit was brief and their interest was in the total plant, not just the environmental controls, their comment on these issues indicate that the degree of control at Kimitshu is generally poorer than that which is proposed at Conneaut. This was expected since the controls installed at Kimitshu are roughly comparable to those controls installed very recently in the United States. Reports of total suspended solids of 400 kilograms is believed to be for the discharge from only a portion of the total steelmaking facility. The degree of control of the coke plant wastewater treatment devices were observed to be significantly lower than that obtained at the Fairfield, Alabama, and Clairton, Pennsylvania, plants. These are the existing plants upon which the Conneaut design will be based. Since the coke plant in any steelmaking complex is probably the source of most of the chemical oxygen demand, the applicant is confident that the total chemical oxygen demand in the effluent waters of the proposed plant would be lower than that presently found at the Kimitshu plant.

The draft EIS did address alternative wastewater treatment facilities and cooling methods in Chapter Six. The discussion considers alternatives as they relate to maintenance of high water quality standards. As indicated in this response, final determinations regarding alternative treatment needed to meet water quality standards, if any, will be made by the appropriate regulatory agencies.

Comment A-13:

Air pollution. According to the DEIS, emissions from the proposed Lakefront plant would cause deterioration of the region's air quality. Data are not available to predict the impact upon area vegetation and agriculture. Such data should be obtained prior to, not after, issuance of any permit. It is of comfort to learn from the DEIS that the applicant would initiate a monitoring program to identify and define the effects of its pollution on vegetation if this were to be done after construction of the plant is already in progress.

Response A-13:

The draft EIS provides information on concentrations of pollutants known to have adverse effects on vegetation and indicates whether or not emissions from the proposed plant would result in ground level concentrations exceeding these values. Chapter Four of the EIS explicitly states the expected impact of SO_2 and sulfates, particulates, NO_2, and ozone on vegetation. The EIS does not advise that data are not available but rather points out specific voids in the present state of knowledge such as synergistic effects of various pollutants. The applicant must obtain final approval from USEPA on their Prevention of Significant Air Quality Deterioration (PSD) application prior to any construction. The purpose of PSD is the protection of the public health and welfare from any actual or potential adverse effect which may be anticipated to occur from air pollution or from exposure to pollutants in other media, notwithstanding attainment and maintenance of all National Ambient Air Quality Standards. If the USEPA determines there is a likelihood of adversely impacting the commercial value of crops, recreational value, etc., they can require further analysis of impacts. Presently, the applicant has not submitted its PSD application to the U.S. Environmental Protection Agency.

Comment A-14:

The contributions from this plant to ozone concentrations downwind from the proposed mill is a most critical issue These would--as I understand--exceed ambient air quality standards for this area. In response to a question at the hearing in Erie, Pa., a scientist from Arthur D. Little answered--if I may quote him:

> "With respect to ozone which is the principal concern where a problem has been reported already in some the grape-growing areas, particularly of New York State, document in the analysis indicates that overall because of the requirements of the Federal FPA and the commitments of the States of Ohio and Pennsylvania to implement those requirements it would be a net overall reduction in the reactive hydrocarbon emissions that are considered crucial to the formation of ozone. In fact, as I understand it, the region being considered where this so-called emissions offset would be required encompasses the two States in its entirety. Looking at it from that geographic perspective, the projection is for an overall reduction. The only conclusion we could come to on that basis was that overall there would not be an incremental adverse effect due to the presence of the Lakefront plant."

This statement points out several issues:

First, there is no issue concerning the statement that combined air quality standards for the region would be exceeded in this important photochemical toxin,

Second, that both Ohio and Pennsylvania recognize the importance of its potential hazard by their commitment to implement the ambient quality standards for ozone, and,

Third, that when one wants to bypass an important legislation or roadblock there is almost always a way.

To offset increases in ozone content in the region downwind of the applicant with decreases throughout the States of Ohio and Pennsylvania in their entirety is to gut this important regulation of any substantial meaning. Why not expand the offset to the entire United States, if necessary, to achieve the desired result. How would a decrease in ozone emissions in Pittsburgh, Youngstown, or Cleveland--if this is where the offset would be obtained (perhaps by closing of steel mills)--how would this decrease the hazard of ozone to people and agriculture in Erie County? Air quality standards to oversee the health and welfare of people and the regulations that permit offset to adjust for changes in industry must apply to precisely the same region of nonattainment if there is to be any substances in the matter.

Comment A-15:

A nonattainment area--as I understand it--can be defined as a region which is shown by monitored data or which is calculated by air quality modeling to exceed national ambient air quality standards for a given pollutant. With a localized region of such an area, offset or tradeoff makes sense because decreases which equal increases add up to no change. But decreases in Youngstown or Pittsburgh would hardly be expected to decrease the health and agricultural hazards of increased ozone emissions over Erie County. If this should be the logic that the EPA pursues, it must first convincingly demonstrate (1) that the direction of airflow from all points within the two States does indeed converge on Erie County, and, (2) it must show with research data that decreases in ozone emissions at representative points within the boundaries of these two States would achieve corresponding decreases in ozone concentrations in Erie County. To do otherwise, would be to gamble freely with our most vital assets.

Response A-14, A-15:

Nonmethane hydrocarbons (NMHC) are major contributors to the ozone air quality levels. The proposed steel plant has been determined to be a major source of NMHC in an area designated as a nonattainment area for ozone, thus NMHC emission offsets are required. The Prevention of Significant Air Quality Deterioration Regulations, published on 19 June 1978, state that the owner or operator must reduce emissions or secure appropriate emission offsets from other nearby sources (emphasis added). The EPA offset policy suggests that the geographic area for finding offsets for VOC (Volatile Organic Compounds) sources should be as flexible as possible. Ideally, the offsets should come from sources as near as possible to the site of the proposed source. If this is not possible, the nest area to consider for offsets would be the Air Quality Control Region where the proposed site of the source is located. Failing in this, the final area for consideration of offsets would be within a 36-hour travel time of the proposed source site. It would be necessary to determine a baseline windspeed for this travel time. Consideration would have to be given to an analysis of previous multi-day stagnation episodes to determine the appropriate upwind distance that would represent the outer limit for the offsets. However, if the upwind travel time of 36 hours criterion is used,the offsets required should be greater than one-for-one.

The draft EIS was in error by stating that the entire state of Ohio has been determined to be a nonattainment area for oxidants.

Comment A-15:

Refer to A-14

Comment A-16:

Turning back to the comments of the representative from A. D. Little, I quote again:

> ". . . Looking at it from that geographic perspective (that is of a two-state offset) the projection is for an overall reduction. The only conclusion we could come to on that basis was that overall there would not be an incremental adverse effect due to the presence of the lakefront plant."

Well sir--the only conclusion I come to from this statement is that when an organization is employed for a specific purpose it must indeed work very hard to produce the desired result. Colonel, I make this point because you have indicated before that as much as 90% of the data base which you must use to arrive at this very important decision has been generated by the applicant who seeks the permits. To add to this, the data has been accumulated on a contracted time scale. While it is all very nice to say that this was possible because of cooperation between Federal agencies, the Corps and the applicant, it does not do justice to the fact that data for parts of a study pertaining to a project of this magnitude frequently require periods which transcend seasonal variations for two or more years in order to assess total impact. The contracted time scale more than anything reflects the time schedule set by the applicant, not the practical feasibility for evaluating total impact.

I would request that the data base itself be re-accumulated, at least in part, by agents independent of the applicant prior to any decisions in the matter. For it is to you--not the applicant--that all of the people look and hold responsible for the protection of their vital interests.

Comment CRG-1:

First, it is blatently obvious throughout the statement that there was an extreme measure of over-reliance on data submitted by U. S. Steel and the consulting firm it hired. One does not have to question the professional ethics of either U. S. Steel or A.D. Little in order to note that they obviously have a built-in bias toward the proposed project. For the Corps to rely so heavily on data submitted by the applicant and proponent of the project may well be a serious mistake.

Response A-16, CRG-1:

Early in the permit review process an inter-agency technical team was formed to scrutinize and evaluate the data collected by the U. S. Steel Corporation and their various consultants. By utilizing the technical expertise of the agency representatives serving on the team we were able to limit the potential for bias and control the quality of the information supplied by the applicant.

In addition, the broad spectrum of agency representatives, environmental groups, and individuals interested in this proposal are invited to examine, analyze, and comment upon the data presented in the EIS during the mandatory public review process. Through this mechanism bias, inconsistencies, or errors in the environmental data furnished by the applicant were readily identified and corrected.

Comment A-17:

Which brings this discussion to the issue of your responsibility as the chief liaison of the lead public agency. On page 6-2, Vol. 4, it is stated, and I quote:

> "Although all of these activities have secondary environmental implications the Corps of Engineers permit only controls those activities within its regulatory jurisdiction. Regulation of air quality, secondary development, land use changes, water quality (associated with point source discharges) are the responsibility of other Federal, State, and local governmental agencies, not the Corps of Engineers. If the Corps permit was issued for this facility it would only relate to those activities listed above."

This statement seems to suggest that the Corps would issue permits for the entrance pier, the intake and discharge facilities and for placement of fill in Turkey Creek quite apart from the feasibility to obtain appropriate standards for other permits

necessary for this project. Dividing the projects required for approval would be a sure way to insure that total impact not be accurately and/or objectively assessed. We urge that this not happen, that no permit be issued unless and until requirements satisfactory for all permits, both primary and secondary, are achieved. To do otherwise would not be fair to either the public or the applicant. It would place unnecessary forward pressure upon our agencies to compromise their standards in order that a large costly, partly completed, project should be able to move forward, or, it would cost the applicant considerable financial loss should the total impact prove to be too negative to permit an ongoing project to proceed.

Comment A-23:

Should permits for the project be granted, some of the pessimism expounded herein could be safeguarded if:

1) Prior to issuance of any permit by the Corps of Engineers, air and water standards equal to existing qualities of these resources in this specific region are first clearly defined,

2) If a specific mechanism for policing these regulations is clearly defined and provided; and, finally,

3) If any permit issued carry with it the stipulation that it would be revoked without adjudication upon identifiable breach of regulation.

Comment AHC-11:

10. Has the Corps, in assuming the role of lead agency for the evaluation process, made arrangements that all the successive permits that would be required to get the plant built are written so as to be "conditioned" on the successful achievement of all the other permits? We dare not, (see our comment 1) contemplate having the nation's treasure invested in a facility of this magnitude that might, later on, prove to be unfit to operate. And, certainly, in the light of all that we have learned, in the 1970's, about the extent of our ignorance of chemical effects upon our life support systems (food, water, air) we dare not, ever again, build now and pay later.

Comment PHCOE-18:

". . . Would the granting of your permits be conditional?" In other words, would you hold off the granting of your permits until the EPA and the other permits have been granted? Are they going to be granted on the conditions that the other permits have been granted, or are you just going to come right out and say the permits have been granted from your point of view;"

Response A-17, A-23, AHC-11, PHCOE-18:

The Corps of Engineers could not justifiably delay a decision on this permit application based on the outcome of future reviews by other regulatory agencies. Issuance of a Corps permit does not negate the need for the applicant to obtain all necessary Federal, State, and local permits and authorizes only construction not operation of the intake and discharge structures. The other regulatory agencies must insure that standards will be met prior to issuance of their permits and therefore any issuance by the Corps would not compromise their respective review processes. It is highly doubtful that the applicant would commit large sums of money to construct the intake and discharge prior to obtaining all other permits needed for operation of the facility.

Comment A-18:

Location of discharge pipe and blast furnaces. Among the important issues of these hearings the pollution of the water we drink and the air we breathe and depend upon for agricultural industry most directly affect the downwind neighbors within the state of Pennsylvania. Why should the two most important contributing factors, the water discharge facility and the 168 coke ovens, be placed in Ohio instead of Pennsylvania? Surely, God, in his wisdom, did not confer with U.S. Steel to determine specifically where these facilities should be located when this Great Lakes Region was conceived. What they request in the specific locations should not be taken as an exclusive approach. There is ample room within the more than one mile of shoreline which U.S. Steel possesses in the State of Pennsylvania for these facilities. It is common knowledge that Ohio pursues more lenient policy toward offenders of environmental regulations. This aside, why should these facilities not exist within the state that would have greatest reason for adjudication pertaining to enforcement of environmental regulations. To place the facilities in Ohio would pit state against state and provide an entanglement--a legal morass--which could effectively shelter this company for decades should the need for prosecution arise. U.S. Steel, in the past, has demonstrated remarkable talent for delay of enforcement even when legal proceedings are pursued through a single state channel. No significant reason was advanced in this impact statement as to why these placements need be located in Ohio.

Comment CAM-7:

I understand U.S. Steel plans to put its discharge on the Ohio side because Ohio laws in this regard are less strict than Pa., but the current is Eastward toward Erie and the peninsula.

Response A-18, CAM-7:

Permits which include specific emission limitations for each emission point are required from the U.S. EPA prior to construction. Location of coke facilities in one State or another is relatively insignificant. Although each State has authority to enforce standards within its own boundaries, the U.S. EPA can take action when a State fails to seek compliance. An NPDES (National Pollutant Discharge Elimination System)

permit is required for the plant discharge and must be appropriately conditioned to safeguard water quality standards. Both the Ohio and Pennsylvania Lake Erie water quality standards are based on high quality water use classifications with the Ohio standards often more stringent for many parameters. Although the Ohio EPA administers the NPDES program, the U.S. EPA has overview authority. Thus, an industry which violates its permit conditions can be prosecuted by either State or Federal authorities. The conceptual plant layout with facility placements in Ohio is based primarily on efficient handling of raw materials.

Comment A-19:

Furthermore, should U.S. Steel justify these arrangements in terms of conveniences to coal storage facilities; we should be reminded of their range of flexibilities when the need arises. For the simple expediency of escaping taxes on materials in transit when legislation to this effect was passed within the State of Ohio in the 1950's, U.S. Steel moved its storages of iron ore to the State of Pennsylvania where they remained until Ohio tax law was repealed. These mountains of material were then again moved back into Ohio. U.S. Steel does indeed have the resource of mobility or fluidity when the need for such arises.

Response A-19:

During the early 1950's steel production requirements rose significantly as a direct result of the Korean conflict. To keep pace with this demand and the limitations imposed by the relatively short Great Lake navigation season lake vessel shipments of iron ore were increased. However, existing storage facilities were not large enough to accommodate the increased volume of material, so the applicant constructed a second storage area on the Pennsylvania portion of the Lakefront site.

Comment A-20:

Element of faith not a basis for action. Much has been made during preceding hearings concerning the extremely poor environmental record of the applicant, even among other steel producing companies of this country. This record speaks for itself--more need not be said except to point out that the objective of the discussions bearing on prior environmental records and prosecutions was not to embarrass this corporation. The objective was to show that the element of good faith is not a viable basis for action. A case could in fact be made that permits for any new facility should be automatically denied this applicant until such time that it merit consideration for responsible development of major industry in a clean environment region. The manner in which merit could be earned would be by complete resolution of environment problems at all of its other mill works--resolution by shutdown not being an acceptable alternative.

Response A-20:

The criteria, guidelines and standards that are being used to develop air emission and effluent limitation requirements for the proposed facility were established to eliminate the unacceptable practices which have occurred in the steel manufacturing industry in the past. The use of modern control technology coupled with monitoring and enforcement by Federal and State regulatory agencies will assure that serious air and water pollution problems do not occur. The regulatory agencies responsible for the issuance of effluent discharge and atmospheric emission permits are not authorized by law to proceed with the suggestions in this comment. Each new facility must be evaluated on its own merits and its interaction with other facilities within the impact area.

Comment A-21:

(a) Is it indeed possible for the applicant to develop a facility in this corner of our two states which has, now and for the future, no adverse impact upon existing water and agricultural industry or on the health and welfare of persons already living in the region who do not want major change from their present ways of life? This is indeed an important question, for these persons who own lands and industry collectively far in excess of that of the applicant are as entitled to freedom of use of their lands, in ways to which they have been accustomed, as is the applicant to use of its lands--i.e., provided that such use does not impinge upon basic freedoms of either parties as guaranteed by our constitution and law, and,

Response A-21:

While current technology cannot completely eliminate adverse impacts (i.e. no adverse impact) the actual severity of most adverse impacts can be controlled through appropriate regulations and best available technology to the extent that they are acceptable and will not significantly affect the health and welfare of the public. The National Primary and Secondary Ambient Air Quality Standards and appropriate State standards have been formulated to protect the public health and welfare.

These standards, established as a result of observed effects and epidemiological studies, have recently been reviewed by the National Academy of Sciences, National Academy of Engineering (NAS/NAE). This report indicates that the primary health-related standards are now set at levels somewhat below those at which adverse effects have actually been observed (National Academy of Sciences, 1974). The difference constitutes the safety margin. There is not and cannot be any guarantee that such effects are completely absent even at the level of the ambient air quality standards. This report also found that "the evidence that has accumulated since the promulgation of the Federal ambient air quality standards...supports those standards."

The proposed steelmaking facility will be required to comply with these air quality standards, to use Best Available Control Technology, and to comply with the most stringent standard which is Lowest Achievable Emission Rate (LAER). Likewise, the Clean Water Act was promulgated to protect the public health and welfare. Section 303 of this Act specifies that water quality standards must consider the designated use of

the waterbody involved and that water quality criteria must be based on this designated use. In the case of Lake Erie, the standards are set to include protection of uses such as drinking water, recreation, and fish and wildlife values. The applicant is required to comply with standards promulgated in accordance with the Act and to obtain various regulatory permits which restrict certain discharges in order to protect the general public. More detailed information may be found in Chapter One of the final EIS in the section entitled "Regulatory Requirements."

Comment A-22:

Refer to A-4

Comment A-23:

Refer to A-17

Comment A-24:

Refer to A-4

Comment ADN-1:

Methodology on air quality analysis with construction of proposed Pennsylvania Electric Companies Coho Generating Plant was not given.

Comment CAM-2:

Small companies which could employ local labor will be kept out of Erie if the big steel mill uses up most of the allowable pollution level.

Comment DW-26:

Since attainment levels for both SO_2 and ozone will be met and probably exceeded, no future industrial construction will be permitted in the air basin region. Environmental takeoffs would be necessary, contributing to deterioration of air quality. Without major construction permitted, local union workers will find jobs almost nonexistent. U.S. Steel could be the local unions' last large construction project, forcing those workers to leave this area or become permanently unemployed.

Comment E-2:

In addition, the said permits will not take up all the allowable pollutant increment so that other industrial development may be hampered, especially in the Erie area.

Comment EPA-78:

The PSD regulations require that any other proposed new source which proposes to locate in a geographical area where consumption of the increments has occurred or will occur prior to that source's construction, that the new source analyze the total and combined impacts upon allowable PSD Class increments. It is possible that the combined impacts of both the Coho and Conneaut projects could cause a violation of either the TSP or SO_2 Class II increment.

Because of the above, EPA recommends that the Environmental Impact Statement on the proposed U. S. Steel Conneaut facility include an air quality analysis of the combined impacts of both the Conneaut and Coho TSP and SO_2 emissions upon the allowable TSP and SO_2 air quality Class II increments. To cite the Preamble of the 19 June 1978 PSD regulations, "(that) whenever any proposed source or modification is subject to action by a Federal Agency which might necessitate preparation of an environmental impact statement pursuant to the National Environmental Policy Act (42USC 4321), review by the Administrator conducted pursuant to this section shall be coordinated with broad environmental reviews under that Act and under Section 309 of the Clean Air Act to the maximum extent feasible and reasonable."

Comment MAE-6:

III. The analysis of air pollutant impacts in the DEIS study did not sufficiently address the effect of mill-related pollutants upon the potential for expansion of existing industrial operations in the Erie air basin. Also, the probability that a coal-fired electric generating plant (Coho #1) will be built in the area should be more adequately addressed. Particulate, sulphate, and photochemical oxidant standards presently in effect or under consideration by the Pennsylvania Department of Environmental Resources and/or by the United States Environmental Protection Agency could place severe limitations on future expansion of existing area industry, even without the approval of the United States Steel project.

Comment PDER-1:

The Draft EIS appears to assume that the entire air quality increments, as specified in the section on Prevention of Significant Deterioration (PSD) of the Clean Air Act Amendments of 1977, are available for use by the proposed steel plant. This is especially critical for the short-term increments (24 hours). The projections of the

highest increases in the 24-hour concentrations due to the plant are 83 micrograms per cubic meter (m/m^3) for sulfur oxides and 30 m/m^3 for particulates. The allowable increments are 91 m/m^3 for sulfur oxides and 37 m/m^3 for particulates.

The air quality projections for 1985 and 1990 do not include emissions from the new power plant proposed by Pennsylvania Electric Company, (Coho Station) for which an application has been submitted to the EPA. The potential emissions from the power plant and the steel plant must be evaluated together to determine their projected combined impact on the allowable PSD increments.

In addition to the major point sources, the air quality impact associated with secondary development must be included in the analysis. No analysis of the short-term impact of secondary development is presented.

For short-term modeling, only receptor sites along the perimeter of the property line were evaluated. Other receptors should also be evaluated. The air quality impact on receptors away from the plant perimeter would be necessary to the analysis of the additive impact of this plant and any other new air pollution sources in the area.

Comment R8-8:

The DEIS examines only emissions to be discharged from the proposed mill, but it does not take into account emissions from the proposed coal-powered Coho power station or emissions resulting from the thousands of additional cars, trucks, and trains needed to provide workers and materials for each stage of construction and eventual operation of these massive projects.

Response ADN-1, CAM-2, DW-26, E-2, EPA-78, MAE-6, PDER-1, R8-8:

The Clean Air Act Amendments of 1977 specified the PSD increments that would be allowed for suspended particulates and sulfur dioxide. Increments for the area impacted by the proposed Lakefront plant are presented below:

Allowed Increases in Baseline Concentrations for Class II Areas

	Maximum Allowable Increase (micrograms per cubic meter)
Particulate Matter	
Annual Geometric Mean	19
24-hour Maximum	37
Sulfur dioxide	
Annual Arithmetic Mean	20
24-hour Maximum	91
3-hour Maximum	512

For any period other than an annual period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location. However, the increment plus the background levels cannot exceed the appropriate national ambient air quality standards (NAAQS).

Modeling projections indicate that the increments from the proposed plant combined with the background levels for Conneaut would not exceed the standards.

The analyses presented in the draft EIS did not assume that the entire allowed increments would be available for use by the proposed Lakefront plant. Further, there were no other permit applications for major new sources in the region at the time this document was prepared. Thus, no other major sources were included in the modeling analysis with respect to increment consumption.

Since then Penelec has applied for PSD permits for the proposed Coho electric power generating station in Lake City, Pennsylvania. The PSD analysis report for the proposed Coho plant, prepared by the GPU Service Corporation, indicates that the increments consumed by the power station alone were less than the allowed amounts. Particulate emissions from the proposed power plant are expected to be extremely low and would not contribute significantly to the ambient levels. However, sulfur dioxide emissions from the plant would be somewhat greater than particulates, and the combined SO_2 emissions of the proposed U.S. Steel and Coho plants were modeled to determine the maximum increments. This analysis was completed in September 1978, and copies of the report sent to the State and Federal regulatory agencies for review are on file at the U. S. Army Corps of Engineers, Buffalo office.

Chapter Four of this Environmental Impact Statement has been revised to include a discussion of the results of the combined Coho-Lakefront analysis for sulfur dioxide. A summary of the results obtained is shown below.

Summary of Sulfur Dioxide Maximum PSD

Increments and Maximum Total Ambient Concentrations

Combined Lakefront and Coho Plants ($micrograms/m^3$).

Federal Standard	PSD Standard	Maximum Increment	Maximum Background	Maximum Total Concentration
80 (annual)	20	6	29-45	35-51
365 (24-hr)	91	87	100-184	187-271
1300 (3-hr)	512	326	350	676

The PSD analysis report for the combined proposed U.S. Steel and Coho plants indicates that the limiting increment for growth in the area is the 24-hour average maximum of 91 micrograms per cubic meter. Determinations have been made from the modeling runs to evaluate, on a regional basis, the fraction of 24-hour average maximum increments that would be consumed by the combined plants.

The maximum 24-hour average incremental concentrations that would be consumed at a number of receptors surrounding both plants as well as receptors along Lake Erie between the two facilities were included in the analysis. It should be noted that the maxima occur on different days with a variety of meteorological conditions, and all receptor values reflect the maxima resulting from the entire RAMS model run. The fraction of consumed SO_2 increment by the two plants ranges from 18 to 96 percent depending on receptor locations. The average maximum increment in the region along Lake Erie between the two plants is approximately 34 percent of the allowed value.

There is room for considerable additional growth in the regional area and PSD limitations for SO_2 would occur in only small specific areas because of the combined plants.

For the allowed increments on the annual and three-hour average, the fractions used by the combined plants on a regional basis are significantly less than the 24-hour average and would not be the limiting regulations. In all cases, the modeling considered the maximum increments at each receptor while the PSD regulation allows for one short-term average exceedence each year. Therefore, an additional margin of safety has been considered in the analysis.

Tables showing the fraction of consumed SO_2 increment by the two plants follow this response.

The long-term increases of sulfur dioxide emissions due to secondary growth from the proposed Lakefront plant were analyzed and it was found that there would be no major incremental increases in annual average sulfur dioxide concentrations for the area. The detailed baseline data used in the above analyses, including the actual computer runs, are on file at the Buffalo District office.

The inclusion of the secondary growth to determine the total increment consumption cannot be readily carried out in short-term modeling because specific locations and operating parameters of the secondary development are not presently known. However, the impacts on the long-term average increments and standards of secondary growth were considered in MCDM modeling for the years 1985 and 1990.

In the MCDM model, the additional growth besides the proposed plants was input as area source grids. The isopleth plots from the MCDM output indicate that the standards will not be violated.

The analysis of combined plant impacts was subject to review and comment by the USEPA, Region III office. The USEPA coordinated this review with the appropriate state agencies in Ohio and Pennsylvania. By letter dated 30 November 1978, the USEPA advised the Corps that the assessment of combined impacts is adequate. However, the EPA also advised that this concurrence does not fulfill all the requirements of EPA's 19 June 1978 PSD regulations and that these PSD requirements must be completed prior to approval to construct the Conneaut facility. At such time as the U. S. Steel Corporation applies for approval to construct the facility under the PSD regulations, more extensive analysis may be required for total suspended particulate (TSP) and SO_2 impacts of all existing sources and new sources which either consume or expand the PSD total suspended particulate and SO_2 impacts of air quality class increments.

Response to ADI-1 Table 1

Maximum 24-Hr PSD Sulfur Dioxide Increments from Combined Plants

Receptor No.	Concentration ($\mu g/m^3$)	Julian Day (from RAMT output)	% of Allowed Increment
1	49	237	54
2	67	62	74
3	87	220	96
4	70	61	77
5	43	172	47
6	43	299	47
7	49	299	54
8	45	299	49
9	32	300	35
10	37	172	41
11	43	301	47
12	36	194	40
13	30	27	33
14	30	42	33
15	37	42	41
16	43	163	47
17	40	173	44
18	51	42	56
19	31	281	34
20	23	42	25
21	16	42	18
22	19	281	21
23	16	299	18
24	24	184	26
25	39	260	43
26	38	281	42
27	19	42	21
28	24	281	26
29	35	220	38
30	42	281	46
31	30	163	33
32	27	299	30
33	32	214	35
34	30	300	33
35	35	191	38
36	44	216	48
37	54	194	59
38	24	220	26
39	40	206	44
40	39	1	43
41	34	221	37
42	45	50	49
43	40	85	44
44	35	142	38
45	57	3	63
46	46	3	51
47	41	332	45
48	30	3	33

Source: Arthur D. Little, Inc.

Comment ADN-2:

Possible impacts to Turkey Creek Watershed with more thorough explanation of alternatives to the need for use of such area not given.

Response ADN-2:

The applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which calls for culverting a portion of the stream and eliminating the diversion channel. A description of this plan and an assessment of its impact on the environment are presented in Chapters One and Four of this final EIS, respectively.

Comment ADN-3:

More thorough analysis of population changes that will inturn present secondary impacts to waste treatment water supplies and schools is needed.

Comment CCD-3:

Page 4-68, Population. Various questions arise concerning the secondary population impacts of the operation of the proposed steel facility. Various methods have been developed to assess this secondary population growth in addition to projecting baseline growth.

1990 Baseline Population - Based on Census data, and local data concerning construction activity, school enrollment, population density, births, deaths, and the availability of infrastructure, the following estimate and projection have been developed for Conneaut.

1978 estimate - 15,230
1990 baseline projection 16,190

1990 Impact Population - Concerns arise in regards to the secondary population growth that will occur in addition to the operations related impact. Using an Employment Multiplier Impact Population Model, a probable 1990 Ashtabula County impact population of 16,181 was obtained. Using the A.D.L. distribution pattern, the city of Conneaut would have a 1990 population of 25,189. (The DEIS establishes a figure of 2 ,065 o 1990.)

Comment CON-1:

It is felt that all population data has been insufficiently addressed. .ow population figures in most areas will not permit suitable planning guides for the impacted areas. Also, low population estimates made by the applicant's agency, the A.D. Little Co., are not based on factual data. The instrument employed to arrive at these figures needs to be scrutinized more closely. The use of past history experiences does not parallel the proposed industrial expansion by U.S. Steel.

Comment CRG-13:

It should also be noted that the most important inputs are the population estimates of the consulting firm. If these estimates are wrong, the entire scenario predicted is invalid. A great number of groups and individuals have already noted that these estimates are grossly under what is most likely to occur. Obviously, as the applicant encountered resistance among local citizens who feared massive growth, the decision was made to bias the study by using very low population growth figures. One wonders what figures would have been presented if the applicant had found the entire area to be composed of individuals with the typical "growth at any cost" mind-set found among chamber of commerce types.

Comment CWP-4:

Examining the DEIS for a total of new residents entering the Regional Study Area as a result of the steel complex, both primary and secondary job related, we note this figure to be 15,800. We believe this to be entirely too low. We suggest the following assumptions and calculations would be realistic.

From the analysis outlined in Item 3 (comment CWP-4) the steel complex can be expected to generate 17,000 new jobs.

A reasonable assumption can be that area-wide unemployment rates would parallel rates in similar regional economies throughout the country and consequently have no great affect on the amount of in-migrant workers.

Based on labor force participation rates as established in the DEIS for wives and children of workers (situations where two or more workers in a family are in the primary and secondary labor force) in an expected 17,000 new jobs the 17,000 worker figure can be assumed to be reduced by 25 percent. The resultant figure is 12,750. This figure represents additional workers in the regional labor force who can be considered representative of new households.

Based again on a DEIS figure of 3.5 persons per household the additional regional population (over the baseline figure) is computed at 44,600.

We suggest that this figure of 44,600 is logical as representing the new residents entering the Regional Study Area by 1990 and through the next three to five years as a resultant of the steel complex - rather than the 15,800 figure.

Assuming a State split in accommodating the new residents of 40 percent in Ohio and 60 ..cent in Pennsylvania rather than the split established in the DEIS of 60 percent ..o and 40 percent Pennsylvania, the steel complex and related population in the Pennsylvania Regional Area in 1990 and thereabouts would be 37,200.

Accordingly as a result of these population analyses we believe the socio-economic impacts of the steel mill complex will be greater than declared for the Regional Study

Area and for the Pennsylvania Regional Study Area. The greater impacts extend to all areas of community development, to the needs for public sewer and water systems, police and fire protection and on and on, - including areas where the public and private sectors interface such as in housing construction and the provision of medical services.

Comment DW-11:

Many of these consequences will be the same during both construction and operation of the steel mill. These consequences will be more drastic than implied in the Draft Environmental Impact Statement (DEIS) because of the conservative population increase projections. The 13,000 plus has been challenged many times by various local and State agencies and private organizations. Some of these are the Northwest Futures Committee, and Peter Loedding of R.A. Winslow Associates. These population figures are around 40,000. This means that all secondary consequences should be multiplied at least three times.

Comment DW-35:

Large discrepancies about population increases exist. The ADL/USS 13,000 person increase prediction has been repeatedly challenged by other agencies. A figure of 40,000 is the most consistent. If this is true, the secondary impacts would be severe and quite burdensome for all affected communities.

Comment E-5:

The following are specific concerns and our evalution of the impacts that the proposed U.S. Steel Plant may cause on our community:

Population Projections

Planning for the impact on the city of Erie of the proposed U.S. Steel Project requires the projection of the increased population that will result by 1990 within the legal boundaries of the city of Erie, and within the area served by the city's water and sewage systems that lie beyond the city's boundaries.

In developing these population projections, the Erie City Committee on the U.S. Steel Project has reviewed the projections that are included in the Arthur D. Little Study, the Draft Environmental Impact Statement, the Erie County Department of Planning Evaluation, the Study by Beckman, Yoder and Associates, and the Battelle Study.

The population projections for the city of Erie and the city's utilities service area made by the Erie City Committee are based upon the following assumptions:

1. Employment during the construction period (estimated at 10,000) will not result in any long term population increase for the city of Erie and its utilities service area. The city of Erie will discourage any housing developments that are intended for short term periods of residence by migrant construction workers. Any residential construction intended to accommodate construction workers who migrate into these areas will be part of the inventory of residential units that will accommodate on a long term basis residents of these areas resulting from natural population increase or the long term employment and population impacts in the operation phase of the U.S. Steel Project. To accomplish these objectives, the city will strengthen its housing and related codes, and the enforcement of these codes.

2. Direct increased employment throughout the bi-State impact area in the operational phase of the U.S. Steel Project will reach a total of 8,500 workers.

3. The total increased direct and indirect employment in the bi-State impact area resulting from the U.S. Steel Project in 1990 will range from 1.5 to 2.0 times the direct employment total of 8,500 workers, a total increase in employment of 12,750 to 17,000 workers.

4. The total increased population in the bi-State impact area resulting from the U.S. Steel Project in 1990 will be 3.2 times the increase in direct and indirect employment, a multiplier used in all utility design planning and required by D.E.R. and E.P.A. This would result in a total increase in population of 40,800 persons to 54,400 persons.

5. The natural increase in population for the bi-State impact area by 1990 that is independent of the impact of the U.S. Steel Project is estimated at 47,200 persons, or an increase from 458,400 persons in 1975 to 505,600 in 1990 (D.E.I.S.).

6. The total population increase in the bi-State impact area by 1990 resulting from natural population increase and from the U.S. Steel Project is estimated to be from 88,000 to 101,600 persons.

7. The population growth scenario that is most likely to occur is the Coastal Community scenario which proposes that the population increases stimulated by the U.S. Steel Project will occur north of I-90 in a coastal zone that includes the area from Ashtabula, OH, through Conneaut, OH, and West Springfield Township in Pennsylvania to the city of Erie.

8. Existing zoning and municipal regulations would enable the city of Erie to accommodate an additional 23,000 residents within its boundaries.

9. The natural population increase expected in the bi-State impact area will not significantly affect the city of Erie, but could result in an increase of 5,000 persons in the city's utilities service area if the city's utilities are made available for residential developments that would accommodate such an increase in population.

10. The Pennsylvania sector of the bi-State impact area will receive 50 percent of the population increase stimulated by the U.S. Steel Project through 1990 (20,400 to 27,200 persons); 90 percent of these persons will reside north of I-90 (18,360 to 24,480 persons), 25 percent of these latter populations will reside in the city of Erie (4,600 to 6,100 persons); and 50 percent of these latter populations will reside in the city's utilities service area outside the city (9,200 to 12,250 persons).

The above assumptions provide the basis for the following population projections:

	City of Erie	City of Erie Utilities Service Area Outside the City
Base Population - 1975	129,000	52,600
Natural Pop. Increase	-	5,000
U.S. Steel Pop. Impact	4,600 - 6,100	9,200 - 12,250
1990 Population	133,600 - 135,100	66,800 - 69,800

These projections are based upon currently available data, and the assumptions and concepts regarding the proposed U.S. Steel Project that are outlined above. They should be revised in accordance with new data, and any modifications that may be appropriate in the assumptions upon which these projections are based.

Comment EPA-8:

The secondary population growth or plant-induced population still appears to be rather low which consequently minimizes all subsequent impacts. A.D. Little should run their assessment procedure for a larger induced population.

Comment EPA-11:

The above discrepancies illustrate the complexities involved in projecting population growth. To adequately address this basic problem, it would be more accurate to present a range of projections, perhaps low/medium/high, corresponding to different growth scenarios. This methodology would allow for a more realistic analysis for predicting the impact of population growth.

Comment HUD-8:

Although we have no specific comment ourselves on the issue we note that several analytical comments regarding population projections have been submitted to your agency. It is essential that any disparities be resolved as conclusions resulting therefrom are fundamental to assessment of primary and secondary impacts of the project. The Berry evaluation (BIG) offers several sources for resolution of such comments.

Comment KE-4:

My last concern is mainly a social one, I've seen predictions that show the Conneaut-Metropolitan Erie area becoming the home of another 30,000 to 100,000 new people, should the Lakefront Plant become operational. I personally would not like to see the Metropolitan Erie area "grow" to become the likes of another Cleveland or Buffalo. Nor am I happy about the prospect of the area moving toward what futurists call the Great Lakes Megalopolis. I think that the rural lands on Lake Erie are rare and delicate in character and definitely feel that the Lakefront Plant and its attendant impacts would diminish this quality.

Comment NPR-2:

The population projections by A.D. Little appear to be very low according to the Pennsylvania Office of Planning and the Erie and Crawford County Planning Commissions. A.D. Little projects new population increases of 7,880 by 1981, 14,235 by 1986 and 15,810 by 1990. The consultants indicate that this final figure of 15,810 represents the total population impact in this area including both primary and secondary impact. That is, populations generated directly and indirectly by the presence of the steel mill. The State of Pennsylvania estimates that the total population increase for Erie, Crawford and Ashtabula will be closer to 37,000 people by 1990.

Comment NPR-4:

The question of the location of residents in Erie vs Ashtabula counties is lacking specific answers. The magnitude of the population and the place of residence will determine the impact and demand for services. A.D. Little Co. has stated verbally that 60 percent of the population will reside in Ashtabula County and 40 percent in Erie County and of the 40 percent in Erie County most of the population will settle north of I-90. This is, at best, a guess. Housing units are not in plentiful supply in either county in the areas projected to be developed. Initially, the construction workers could reside in the Erie Metropolitan area, Corry, Wattsburg or Union City where some housing is available, therefore the initial demand for health services could be on Erie County facilities. The final settlement of the new mill work force will alternatively decide where these people will seek services. If we were to utilize the State population projections and the consultants' ratio of 60 percent Ohio and 40 percent Pennsylvania residences then approximately 14,800 new residents will relocate to Erie and Crawford and 22,200 in Ashtabula and surrounding Ohio communities. No information is available indicating, from this figure, the percentage of population settlements in Erie vs Crawford County, but it is generally believed that a large majority will opt for Erie County. The Pennsylvania State Office of Planning and Development has projected a normal growth of 34,000 by the year 1990.

Comment NPR-5:

The population increase may be greater than 30,000 and the ratio of 60 percent Ohio and 40 percent Pennsylvania settlement may be erroneous if one accepts the premise that the local area does not have the necessary skilled labor for steel mill production and most of the skilled labor will originate from urban areas in the tri-state area including Pittsburgh, Pennsylvania and Youngstown and Cleveland, Ohio where such trained individuals may currently reside. The pattern and preferences for urban vs rural life and the pattern and preferences for health care which this new population will bring may have already been established. There urban-oriented individuals may, in fact, be more willing to seek large group practices, prepaid health care programs and special health care.

Comment NWP-9, NWP-10:

The theory of community economic structure uses the concept of "basic" employment to describe those jobs that bring outside revenue into the community. Basic employment includes manufacturing, agriculture, mining, and resort activity. In simplistic terms, the basic activity provides a balance of payments by which the community can afford to import goods and services which are produced outside the area. While such concept is greatly simplified -- communities and regions have become very intertwined because of increased mobility for example -- yet the theory does provide a generalized guide as to the relationship of basic employment to "service" employment. Basic employment generally constitutes about 40% of total employment and this percentage has been moving downward. The long-term effect of 100 jobs in "basic" industries is to produce an additional 150 jobs in trade, finance, personal and professional services.

In the short run, the effect may be substantially less. A small increase of basic employment in a large regional economy may have little noticeable effect. The jobs for instance may be absorbed by persons who are "underemployed" so that no change results in the population of the community. Those already providing services may be able to accommodate the increase through increasing their level of business. A barber, for example, may simply cut more heads of hair.

A time lag is usually associated with the provision of additional service employment also. An increase in local payrolls, for example, may result in a higher level of business activity and existing stores. The increased profits may in time attract new business ventures causing an increase in service employment.

However, when a large increase in basic employment occurs rapidly, the related growth in service industries will occur much more rapidly. A substantial, well-advertised and assured increase in employment and payroll is certain to attract the attention of the enterprisers in our society. A project requiring 10,000 construction workers and providing nearly that many permanent jobs is certain to expedite the rate at which service employment grows.

Comment NWP-14:

In preparing revised estimates of the growth of population due to the construction of the U.S. Steel Mill, two assumptions are made.

First, it is assumed that the average size of family will be lower than that projected in the D.E.I.S. The reduced family size results from the assumption that most people who will be available to fill the jobs are young -- either recent entrants to the labor force, or in-migrants. Mobility patterns indicate that most migrants are in the age groups between 20 and 35. Within the projected period, their family size is likely to be relatively small. A factor of 2.5 persons per family is utilized.

Secondly, no correction is made for adjustment of unemployment rates. It is not certain whether unemployment will decrease because of the availability of new jobs, or increase because of the region's attractiveness to new residents. It is simply assumed that the new growth is most easily estimated by equating jobs directly to heads of households.

It will be noted that aside from reducing the number of persons per household, no factor has been introduced to account for workers who are not heads of households. Surely this is an important factor. Its omission was purposeful, if simplistic, since no factor was included to measure the increase of Regional population due to in-migration of construction-related workers. These omissions should cancel out one another.

REVISED ESTIMATES OF IMPACT GROWTH (1990)

	Low Estimate	Middle Estimate	High Estimate
Total Impact Employment	16,450	18,800	21,150
New Households	16,450	18,800	21,150
Persons/Household	2.5	2.5	2.5
Total Impact Population	45,500	52,000	58,500
Base Line Population Increase (from D.E.I.S. 1970-1990)	47,200	47,200	47,200
Total Population Increase	92,700	99,200	105,700
1975 Population			
Ohio Regional Area	102,000	102,000	102,000
PA Regional Area	356,400	355,400	356,400
Total Population (1990)	551,100	557,600	564,100

Comment NWP-15:

It seems readily apparent to all Regional officials interviewed that the extent of the geographic area to be impacted by the proposed U.S. Steel Plant is substantially greater than that presented in the D.E.I.S. The scenario proposed by the impact assessment spreads the understated new growth evenly through a small area located along the lakefront. No new growth is assigned the city of Erie, the largest focal point in the economic and cultural center in the Region. Similarly, no spillover is anticipated in other urban centers within relatively short drives of the proposed facility.

This growth proposal is based on a number of assumptions which seem unjustified.

The majority of the growth (approximately 60 percent) is assumed to be located in Ohio, and this assumption is supported by the assertion that property taxes are far lower there than in Pennsylvania. In point of fact, the facilities and services most likely to be desired by new residents are much more extensively in place in Pennsylvania than in Ohio.

Few new residents, it is argued in the D.E.I.S., would move to the south of the Lakeshore communities. The Lakeshore communities would be attractive because of the east-west orientation of transportation facilities, the momentum of suburban growth to the east and west from the city of Erie, and the negative impact of the reputedly harsher winters away from the Lake.

The proposal suggests that almost all of these residents would live in new suburban housing and that the distribution of housing by communities would, for the most part, vary inversely with the distance from the Plant. Following these assumptions, a mathematical model was utilized to calculate and present extremely detailed measures of the impact on each of the impacted municipalities. The resultant impacts were not presented as ranges of possibility, but rather as finite quantities in detail greater then that justified by the generalization of assumptions. Conveniently, the predicted impact is distributed so that few problems would be encountered by any of the municipalities.

If the Steel Plant is built, the resultant growth will most probably be located in response to many more variables than were considered by the Impact Statement. These variables would include the policies, objectives, and limitations of governmental agencies, private enterprise, and the new people attracted to the area.

Comment NWP-25:

It is argued in the D.E.I.S. that experience of impact in the "Sunbelt" area have no application to the subject project since they were located in smaller areas with fewer economic resources to draw upon. This is simply not the case. The vacancy ratio in housing in the Principal Study Area, together with the existing growth climate, clearly indicates that a very substantial housing shortfall will occur unless adequate response is made well in advance. Such reponse simply cannot be made if the extent of impact is as completely underestimated as in the D.E.I.S.

The most significant lesson to be learned from other growth impacted communities is that the problems for all parties are made more difficult and the adverse impact of growth are amplified when the initial estimate of the size of the impact is underestimated. The problems of forecasting in this situation results in circumstances that are reversed from those that a forecaster normally faces. Usually, it is prudent for a forecaster to err on the conservative side and to underestimate growth rather than overestimate. If actual growth exceeds his estimate, few people are unhappy because more "progress" means improved economic return for all parties and they are all happier because their return was greater than they had anticipated.

Comment PDER-15:

A more accurate projection of population growth and secondary development resulting from the construction of this facility is needed.

Comment PGC-25:

Secondary impacts on wildlife are briefly described in paragraphs 4.208 (page 4-217) and 4.666 (page 4-767). These presentations are too superficial to permit any meaningful evaluation.

Comment PGC-26:

The Game Commission is quite concerned about the numerous questions that have been raised regarding the accuracy of human population projections contained in the draft E.I.S. A significant population increase would present several areas of concern.

First, land requirements for housing and support facilities would significantly impact many wildlife areas. Increase in number of hunters would increase demands for hunting opportunity. Increased interaction between wildlife and people would increase complaint and service calls for district and deputy game protectors.

Accurate human population projections are needed to enable the Commission to accordingly adjust its programs to meet local demands.

Comment STP-5:

One element which becomes somewhat critical in formulating the previously mentioned facility plans is the population projections. The population projections contained in the draft EIS vary significantly from those of other responsible agencies. While we are not sure which projections are probably going to occur we are requesting that the Impact Model of the Arthur D. Little firm be given the projections of the Erie County Department of Planning as input. Our concern is to attempt to see how the impacts based upon populations will vary if this projection is realized.

Response ADH-3, CCD-3, CON-1, CRG-13, GWP-4, DW-11, DW-35, E-5, EPA-8, EPA-11, HUD-8, KE-4, NPR-2, NPR-4, NPR-5, NWP-9, NWP-10, NWP-14, NWP-15, NWP-26, PDER-15, PGC-25, PGC-26, STP-5:

The data provided in the above comments is acknowledged. Corps staff notes that many population projections are possible, based on the variables involved and the number of different scenarios that exist, some of which are more likely to occur than others. As this final Environmental Impact Statement was prepared a number of governmental agencies submitted independent population projections which in their opinion provided a more representative portrayal of the impacts associated with the proposed Lakefront plant.

The applicant projects an increase of 15,800 new residents for the Regional Study Area by the year 1999, with a possible range from a low of 11,060 to a high of 20,540. The Ashtabula County Planning Commission projects an increase of 16,181 to 26,265 new residents for Ashtabula County alone. The Crawford County Planning Commission predicts 44,600 new residents for the entire Regional Study Area while the Northwest Pennsylvania Future Committee, Inc., projects 45,500 to 58,500 and the County Executive, Erie (PA) County predicts 37,187 to 47,812 new residents. The methods used in deriving these figures are contained in the following reports:

Ashtabula County Planning Commission, Alternative Futures for Ashtabula County: A Study of Impact Scenarios; October, 1978

Crawford County Planning Commission, Correspondence; 14 August 1978

Northwest Pennsylvania Futures Committee, Inc., Correspondence; 22 August 1978

Office of the County Executive, Erie (PA) County; Preliminary Projected Population, U. S. Steel Impact Area, 17 October 1978

These documents are available for public review at the Corps of Engineers offices in Buffalo, NY, and Cleveland, OH, along with the Erie City and County Public Library, Erie, PA, and the Carnegie Public Library, Conneaut, OH.

Population projections are difficult to categorize as accurate or inaccurate since they are highly speculative at best. The various estimates derived can be easily prejudiced by accentuating certain baseline data input over others, incorporating the goals and personal references of planning professionals, and other factors. All of the population scenarios provided by the review agencies, as well as those provided by the applicant, can be placed in this category. In any case, staff does not believe that the addition of 11,000 to 58,500 new residents in the three-county Regional Study Area would transform the Erie Standard Metropolitan Statistical Area (SMSA) into one similar to the Buffalo SMSA (1975 population = 1.3 million) or the Cleveland SMSA (1975 = 1.9 million). Additionally, these new residents would not create a "megalopolis" (thickly populated region embracing several metropolises) along Lake Erie.

Impacts on public infrastructures (i.e., sewage treatment, health care facilities, schools, etc.) are based on the applicant's population projections. Due to the number of problems associated with the incorporation of data from one modeling scheme to the next we have chosen to leave the applicant's projection intact as an illustrative example of secondary development impact. However, to present the reviewer with some perspective of the effect the various alternatives would have, the figures provided in the socio-economic section of this environmental impact statement can be changed by using the following multipliers:

U. S. Steel Corporation	- High Range = 1.30	(20,540/15,800)
	Low Range = .70	(11,060/15,800)
Ashtabula County	- High Range = 2.77	(26,265/9,480)
	Low Range = 1.71	(16,181/9,480)
Crawford County Planning Commission	= 2.82	(44,600/15,800)
Northwest Pennsylvania Futures Committee	- High Range = 3.70	(58,500/15,800)
	Low Range = 2.88	(45,500/15,800)
County Executive Erie (PA) County	- High Range = 3.03	(47,812/15,800)
	Low Range = 2.35	(37,187/15,800)

The following example is presented to illustrate this method.

This Environmental Impact Statement indicates that the overall impact on the public school systems located in the Local and Principal Study Areas would increase enrollment by 3,280 students over baseline projections. Utilizing the applicant's range of ± 30 percent, the school enrollment impact could vary from 2,296 (.70 X 3,280) to 4,264 (1.30 X 3,280) pupils. Crawford County Planning Commission projections would be 9,250 (2.82 X 3,280), Northwest Pennsylvania Futures Committee would range from 9,446 (2.88 X 3,280) to 12,136 (3.70 X 3,280), County Executive, Erie (PA) County from 7,708 (2.35 X 3,280) to 9,938 (3.03 X 3,280); and Ashtabula County Planning Commission from 5,609 (1.71 X 3,280) to 9,065 (2.77 X 3,280). The reviewer is again cautioned that these numbers are to be used only for illustrative purposes and reflect what may happen and not necessarily what will happen.

Staff felt that governmental and quasi-public agencies who have submitted substantial criticisms and/or developed other detailed analysis of population projections should meet and attempt to resolve their differences. In this respect we requested the Federal Regional Council, Region III, to conduct a meeting with the representatives of these agencies to develop, by consensus, a single set of criticisms that the Corps of Engineers could submit to the applicant for response. The minutes of the 13 September 1978 meeting, along with the applicant's response, is appended to this statement. Unless otherwise noted, the actions recommended in the minutes represent the consensus of the participants and do not necessarily reflect the views of the Corps of Engineers or the Federal Regional Council. In the case of issues not specifically stated in the minutes, the consensus of the participants were that (1) the material presented in the Environmental Impact Statement was adequate or acceptable and that (2) any shortcomings were too inconsequential to require further attention.

In view of the circumstances outlined above the estimates have not been altered to reflect the data contained in the various alternative projections. This final EIS has been modified where appropriate to resolve inaccuracies, inconsistencies, or errors in the applicant's original analysis.

Comment ADN-4:

Refer to A-12

Comment ADN-5:

Refer to A-12

Comment ADN-6:

Alternative structures to the solid fill pier extension that will assure adequate water cordially.

Comment CRG-48:

5.116 This section notes that no acceptable mitigation is given for the impacts of pier construction and dredging.

Comment EPA-54:

A solid fill pier will destroy aquatic habitat and effect water circulation in the harbor, possibly creating stagnant conditions.

Comment EPA-55:

The proposed pier design may be unacceptable. The applicant should evaluate open-pile structure to avoid habitat destruction and circulation disruption.

Comment FWS-5:

Construction of marine receiving facilities as proposed in Conneaut Harbor will have a significant impact on what appears to be a very important spawning and nursery area. Further discussion by the applicant is needed in this section and in Chapter 6, Alternatives, regarding two considerations: (1) justification for a total pier extension of 1,500 feet, and (2) alternative locations and/or configurations for necessary pier requirements.

Comment FWS-50:

Regardless of whether or not shallow areas which may exist in the western portions of Conneaut Harbor (as discussed in paragraph 4.625, page 4-775) would also support spawning, nursery, and feeding activities by similar fish populations, the loss of one-third of this habitat is unacceptable. Alternatives mentioned earlier in our comments must be formulated and thoroughly evaluated.

Comment OEPA-10:

Consideration should be given to possible alternative designs for pier construction which would not significantly alter water circulation patterns. Could pilings be incorporated into the design of the proposed extended piers? We have serious concerns with the effects of oxygen depletion and possible anoxic conditions during warm months which could result from reduced water circulation (Volume 3, Section 4.681).

Comment TU-2:

Construction in Conneaut Harbor will have an important impact on fish spawning and nursery areas. The applicant has not adequately discussed this matter in the relevant section. Furthermore, the applicant has not adequately justified a pier extension of 1,500 feet, and has in Chapter 6, failed to indicate alternative locations or configurations for piers.

Response ADN-6, CRS-48, EPA-54, EPA-55, FWS-5, FWS-50, OEPA-10, TU-2:

The proposed pier extension would be approximately 400 feet in length, while the adjacent unloading dock would have an overall length of 1,122 feet. These dimensions represent the minimum necessary to safely accommodate the 1,000-foot lake vessels that would service the proposed Lakefront plant.

Other configurations have been considered by the applicant, including a straight pier with an overall length of 1,500 feet and an angle arrangement that would connect with the existing U.S. East Breakwater. However, both plans would significantly encroach upon the outer harbor area maintained by the Federal Government creating a hazard to navigation for deep draft vessels and small craft alike. The proposed configuration, on the other hand, does not impede vessel movement in the outer harbor area.

During the review period for the draft E'S, agency representatives, public interest groups, and interested individuals expressed concern that the applicant's pier proposal would impede water circulation and needlessly destroy aquatic habitat. In response to these concerns, the applicant has altered the design of the unloading pier. The modified pier design is described in Chapter One of this final statement, while Chapter Four contains a summary of the associated environmental impacts.

Comment AeG-1:

1. What has been the disposition of the issue of the SO_2 emissions situation? The applicant's initial proposal, to monitor SO_2 production after completion of the project, being ludicrously unacceptable. It is crucial for those who operate the downwind nurseries and vineyards and strawberry fields to know what degradation of their life support system must be anticipated.

2. We request, in the answer to the above, a mass balance (by materials, by element, by compounds, and with indication of known intermediates and suspected carcinogenic precursors) for the mill, from intake, through each step, process by process, to the various fabricated products and the full set of wastes. This information would be most generally useful if it could be tabulated in a number of different forms, for various applications. For example we would need not only concentrations (as mg per cubic meter) but also actual tonnages per ton of steel produced. This will permit ready translation into the terms needed to understand how much material will be added (per hour, day, year) to the nearshore waters of Lake Erie, or dispersed into the air over northwest Pennsylvania, northwest New York, nearby Ontario, and points east. This data would also continue to be useful for discussions of the tightening of water quality standards, and for the redesign of offset policies in air pollution control.

Comment PHCOE-16:

"...American Medical Association Report on carcinogenic fly ash, I would think should need to be studied and put in proper prospective to the plant."

Comment SAE-8:

(F). Lakefront Steel Mill emissions of hydrogen fluoride, and heavy metals and other trace elements are not adequately discussed in the Draft EIS. Even at trace amounts in the raw material used by the Lakefront Facility, the large amounts of coal, oil, iron ore, and limestone consumed over the lifetime of the Lakefront Facility will result in considerable quantities of these elements potentially emitted by the steelmaking process.

Comment SAE-9:

Those of particular concern to agriculture are fluorides (as discussed above) and the potential of heavy metal residues in agricultural crops or in agricultural soils. An estimate should be made of the quantities of these elements in the iron ore, limestone, coal, oil, and other fuels used by the Lakefront Facility, and an estimate should be made of amounts of these elements emitted into the atmosphere in the fuel combustion and steel making process. Estimates should also be made of atmospheric concentration and deposition at agricultural sites of various distances from the Lakefront Facility site. Suggested elements to examine include F, Cl, Br, As, Hg, Pb, Se, Cd, Cu, and Zn. The impact of these pollutants from steel mill related secondary development (Item 18, p. viii of Summary) should also be examined.

Response AHC-1, PHCOE-16, SAE-8, SAE-9:

Based on projected emission rates and modeling data, the Lakefront plant would meet the applicable air quality standards for sulfur dioxide. The increment from this facility when added to the baseline would not have any adverse impact on nurseries, vineyards, and strawberry fields downwind of the proposed plant. The relationship of nonmethane hydrocarbon emissions to ambient ozone levels cannot be evaluated until such time as the applicant submits the required air quality permit applications to the U.S. Environmental Protection Agency.

Operation of the proposed facility cannot commence until the applicant provides the required information and the EPA has completed its review. The EPA will determine whether or not the proposed facility will meet standards which were established to protect the public health and welfare. If this agency determines during its Prevention of Significant Air Quality Deterioration review that there is a likelihood of adverse effects on vegetation, especially the commercial value of crops, they can require further evaluation prior to any construction. However, state-of-the-art methodologies for analysis of synergistic effects are still too rudimentary to accurately establish impacts.

Staff has reviewed the American Medical Association (AMA) report entitled. "Health Evaluation of Energy-Generating Sources," adopted by the AMA House of Delegates 21 June 1978. This report stated that:

i) radon 222 continued to be released from coal fly ash long after combustion and can produce a chain of radioactive daughter nuclides, and

ii) low sulfur western United States coal contains 50 times as much uranium and radium as most eastern coal.

The radioactivity released from western U.S. coals would account for less than 0.01 excess deaths per 1,000 Mde plant for the remainder of this century.

Trace elements, trace fluorides, and heavy metals would arise in conjunction with the materials consumed and emitted by the proposed plant. These pollutants occur as a result of process operations, related handling and processing of raw materials, and the process intermediates and by-products. The trace element sources are the raw materials (iron ore, limestone, coal, and oil) consumed by the plant process operations and by-products of the processing and operating activities. The annual quantities, along with their respective hourly annual average particulate emission rates, are presented in tabular form at the end of this response.

The process of determining trace elements evolved slowly because of the variability of these constituents within a given source material, the process the source material has been subjected to, the nature of the samples selected from a given source, the handling procedures utilized during the analysis, as well as the variability of the analytical procedure itself. Efforts by the Bituminous Coal Research Center (BCR) and USEPA have been directed to the development of reliable trace element analysis procedures for coal, but little is known for the other raw materials or the slag being processed at steel plants. The work on coal trace elements, together with prior work of the U.S. Bureau of Mines on the composition of coal ash, provides a means for estimating the emissions of some trace elements from coal usage. Particulate emissions from all fuel combustion can be estimated, together with those for coal combustion if the fly ash from oil and by-product fuel gas combustion are considered to be generally equivalent to the composition of coal ash.

Designated trace elements of particular concern, together with their indicated concentrations in coal and coal ash from referenced sources are presented in the tables following this response. Comparable data are not available for trace element concentrations in iron ore or limestone. Again, the source of either mineral and its subsequent handling and processing would significantly affect its respective concentrations. For purposes of analysis, it has been assumed that the concentrations of trace elements in the mineral raw materials are comparable to their concentrations in the metallurgical coals, as indicated from the Bituminous Coal Research Center data.

Utilizing the data reported in tables entitled, "Annual Consumption and Emiss on Rates for Lakefront Plant Raw Materials" and "Specified Trace Element Nominal Distribution in Coal and Ash," the trace element emission rates associated with particulate emissions can be calculated. The results are shown on the attached table entitled, "Calculation of Nominal Hourly Annual Average Emission Rates of Specified Elements contained in Plant Particulate Emissions."

Fluorides, heavy metals, and trace element emissions were the subject of discussions with the various agencies involved in the review of the proposed project. The applicant and qualified experts in various agencies do not anticipate significant emissions of fluoride. Fluorides were a recognized problem in older steelmaking devices, such as the open hearth. Principal source of fluoride was from the fluorspar used as a flux for the slag. The quantity of the fluoride discharges from a basic oxygen furnace are much lower. The emissions from the proposed Lakefront plant would be far lower than a typical basic oxygen furnace because of the planned elimination of fluoride containing fluxes at the Lakefront plant.

Studies of trace element effects have been made at other steelmaking locations having far less stringent emission controls than those planned for the proposed Lakefront plant. The quantities of materials identified in emissions from a poorly controlled open hearth would most likely be orders of magnitude higher than that projected for the proposed Lakefront facility. The results reported indicated that it was difficult to detect any serious damage to crops in surrounding agricultural areas even with the ted capability of the process control devices that were available many years ago.

Representatives from the various agencies involved in project review determined that analysis of total particulate concentrations would more accurately reflect the impact of the proposed facility than attempts to utilize the rudimentary state-of-the-art to predict specific trace elements and heavy metals which comprise particulate matter or are absorbed to particulates. The difficulty in precisely predicting the emission of specific trace elements is complicated further by the many factors which modify or affect the pathways and behavior of trace elements in terrestrial systems such as temperature, precipitation, soil type, and plant or animal species subject to exposure. Additionally, much of the information on trace element toxicity to animals, humans, and plants is based on short-term, acute exposure which may not give a good indication of the effects of low-level, long-term exposure.

Trace elements and heavy metals in the wastewater are discussed in Chapter Four of this final EIS. The impact of these pollutants from steel mill-related secondary developments is entirely restricted to the quantities of materials found in the discharges from municipal wastewater treatment plants and the waste sludges from such treatment plants. These effects are well known and documented and are subject to regulatory requirements under NPDES permit program and criteria promulgated in accordance with the Resource Conservation and Recovery Act of 1976.

Overall, the proposed facility will be required to meet all applicable regulatory requirements to ensure that water quality and air quality standards are not violated.

Response to AIC-1 Table 1

Annual Consumption and Emission Rates
For Lakefront Plant Raw Materials

Material	Annual Consumption* (million tonnes)	Emission	Emission* Rate (kg/hr)
Iron Ore	9.7	Fe_2O_3	56
Limestone	1.3	$CaO/CaCO_3$	6.2
Met. Coal	4.8	Coal/Coke Fines	90
Steam Coal	0.3	Combustion Ash	186
Fuel Oil	1.4		
Slag	1.0	Slag Fines	0.2
Other	-	Road Dust	1

*Indicated rates rounded off.
**Indicated ash emissions of 186 g/hr include both actual emissions of combustion ash and emissions of 68.8 kg/hr from sinter plant exhaust stack allocated as coal ash as a worst case condition rather than as more benign iron ore, which is about 90% sinter plant charge mix relative to coke, and about 99% relative to nominal ash in coke charged and, therefore, relative to ash in stack emission.

Source: U.S. Steel Corp., Adapted from DEIS Table 1-21, Proposed Steel Plant Air Emissions Inventory Sources - Annual.

Response to AHC-1 Table 1

Calculation of Nominal Hourly Annual Average Emission Rates of Specified Elements* Contained in Plant Particulate Emissions

Source Materials	Coal/Coke Fines	Fly Ash	Iron Dusts	Limestone	Combined
Emission Rates - kg/hr	90	186	56	6.2	-
Synthetic gm-mol wt - gm/mol	12	58	160	100	-
Specified Trace Elements					
Element Emission Rates - gm/hr					
Fl	14.2	nr	(0.7)**	(0.1)	(15)
Cl	180	186	(1.1)	(3.1)	(344)
Br	15.6	nr	(0.8)	(0.1)	(16)
As	28.1	29.7	(1.3)	(0.2)	(54)
Hg	0.9	0.2	(0.1)	(neg)	(1)
Pb	46.6	11.1	(2.2)	(3.8)	(62)
Cd	0.1	nr	(neg)	(neg)	(0.1)
Se	3.6	nr	(0.2)	(neg)	(4)
Cu	14.4	24.1	(0.7)	(0.1)	(36)
Zn	14.6	42.6	(0.7)	(0.1)	(52)

Notes: *The calculation of elemental rates makes no provision for lessened chemical reactivity and form of any chemical compounds.
**Quantities in (-) are hypothetical estimates assuming trace element concentrations in coals would be similar for minerals.

Response to AHC-1 Table 2

Specified Trace Element Nominal Distribution in Coal and Ash*

	Coal Trace Elements			Ash Trace Elements	
Specified Element	Ref. (1a) (ppm)	Ref. (1b) (ppm)	Other Ref. (wt %)	Ref. (2) (wt %)	Other Ref. (wt %)
Fl	100	50 - 100	-	nr.	-
Cl	nr.	0.2%	0.1 - 0.2(3)	nr.	0.05 - 0.10(3)
Br	nr.	≤ 26	-	nr.	-
As	50	2.5 - 15	-	0.016	-
Hg	0.6	0.1 - 0.2	0.2×10^{-4}(4)	nr.	1×10^{-4}(4)
Pb	30	< 1.6 - 7.0	-	0.006	-
Se	6	1.3 - 5.8	-	nr.	-
Cd	nr.	< 0.1	-	nr.	-
Cu	30	≤ 26	-	0.013	-
Zn	30	≤ 22	-	0.023	-

*Where data allowed, nominal concentrations have been indicated for eastern coal and more specifically West Virginia and Pennsylvania coals as appropriate.

Ref. (1a) Op. cit.
(1b) Op. cit.
(2) Op. cit.
(3) T.L. Iapalucci et al., U.S. Bu Mines RI 7260 "Chlorine in Coal Combustion" (1969)
(4) R.C. Diehl et al., U.S. Bu Mines TPR 54 "Fate of Trace Mercury"

Comment AHC-2:

We request, similarly, an energy balance, again process by process, to aid in understanding the alleged "40 percent reduction" in energy use requirement per ton of steel produced. This should include the Btu that will go into warming the air, as well as the addition to the water.

Response AHC-2:

Representative conventional integrated plants with a wider mix of products typically consume in the range of 155-175 million kcal/tonne (35-40 million Btu/ton), or 40 percent to 60 percent more than the proposed plant. Hence, the proposed Lakefront plant, by taking advantage of large-scale facilities dedicated to a limited product mix and using the best available technology for process design, is able to show a substantial reduction in energy consumption when compared to conventional integrated steel plants.

Comment AHC-3:

We also request an up-to-date compilation of the possible energy sources that are being considered to provide power for the mill. We need to know what fuels are sought to create electricity, and would like, here and elsewhere, to know what figures are being utilized in extrapolating energy prices. It would also help, in dealing with some prevalent rumors, to have the statement be explicit about what power sources are not being considered (e.g., floating nuclear power plants, offshore.)

Comment KE-3:

Another of my concerns is that this plant will be highly automated and energy intensive. Here, my concern focuses on the fact that the electricity to be consumed by this plant will come from a power grid that is no small way supplied by nuclear-generated electricity. Though it is easy to view the proposed Lakefront plant and the proposed nuclear power stations as two separate issues, the plant's highly consumptive energy requirements in some ways legitimize the need for the atomic plants. I feel that nuclear reactors are a dangerous and unproven technology (no safe method has yet been devised for disposing their long-lived deadly wastes), and perhaps save for the requirements of heavy industry, they are an unnecessary technology. I could cite other criticisms of nuclear power, but that is not the main intent of this letter (After decades of promoting nuclear power, the Federal Government is just beginning to look at the side effects--I strongly urge you to read Nuclear Power Costs by the Committee on Government Operations, House Report 95-1090, 25 April 1978).

Comment PDER-10:

No mention is made of Penelec's proposed Coho Electric Generating Facility (completion date 1986) in future growth and resource use projections. The last sentence of page 2-931 dealing with power-cooling use appears to reflect water use by this facility, however, it makes no specific referral to it. This should be clarified.

Comment PHCOE-11:

"...I'd like to offer my comments on the connection between U.S. Steel and nuclear power because U.S. Steel's Draft Environmental Impact Statement makes clear that nuclear power is the key to U.S. Steel's energy strategy."

Response AHC-3, KE-3, PDER-11, PHCOE-11:

The applicant plans to generate approximately 25 percent of its required electrical energy from blast furnace and Q-BOP gases, supplemented with coal. However, most of the electricity required for the Lakefront Plant would be purchased from local public utility systems.

Local electrical utilities have planned systems that would have the capability of supporting future growth of the region which would be far above the needs of the proposed mill.

Licensing for a power plant is a time-consuming process which considers many criteria, including a separate analysis of projected population growth. Power companies must demonstrate a definite need for power before licensing is considered. This demonstration of need is subject to detailed analyses by the appropriate regulatory agencies. It would be difficult, at best, for any power company to justify its need for additional power based on the proposed steel mill. At present, Corps staff is aware of three proposed power plants in the Regional Area: Erie Nuclear Power Plant proposed for siting in the eastern portion of Erie County, Ohio, Perry Nuclear Power Plant proposed for Perry, Ohio; and the proposed coal-fired Coho Generating Station near Lake City, PA. The utility companies proposing these facilities project a need for power regardless of whether the steel mill is constructed.

Erie Nuclear and Perry Nuclear Power Plants were proposed long before U.S. Steel Corporation submitted an application for a Department of the Army permit. The proposed Coho Power Plant is an independently proposed project based on the need for power in the service area for Pennelec, which is a part of the GPU Corporation.

The Nuclear Regulatory Commission generally notifies the Corps of Engineers when a new nuclear plant is proposed. As of this date, the Corps has not been notified of any additional nuclear power plants being considered for construction which could provide power for the proposed mill.

Any assumptions made in regard to the proliferation of nuclear power facilities as a result of the proposed steel mill are erroneous.

The projected increase in power cooling water for 1990 cited on page 2-931 of the draft EIS was based on information contained in Northwest Area Profile: A Baseline for the Future, by the Pennsylvania Department of Commerce, Community Affairs, Environmental Resources, Public Utilities Commission, Office of State Planning and Development. The above study did consider water consumption for the proposed Coho facility

Comment AHC-4:

What, in the present instance, is the meaning of "Best Available Technology?" How does this relate to the statutory definition, and its various interpretations?

Response AHC-4:

Best Available Control Technology as defined in the Prevention of Significant Air Quality Deterioration (PSD) regulations of 19 June 1978 means "an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the act, which would be emitted from any proposed major stationary source or major modification, which the permitting authority on a case-by-case basis, taking into account energy, environmental, and economic

impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant." In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by an applicable standard under 40 CFR part 60* and part 61**. If the reviewing agency determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard unfeasible, it may instead prescribe a design, equipment, work practice or operational standard, or combination thereof, to require the application of BACT. Such standards shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment work practice, or operation and shall provide for compliance by means which achieve equivalent results." BACT as it pertains to the proposed facility is discussed in Section 1.237 and Table 1-20. These BACT requirements listed in the EIS are the ones that are presently proposed. The final determinations will be made at a later date during the PSD review by the USEPA. To date, the applicant has not applied for a PSD permit.

Comment AHC-5:

Through what lines of reasoning have such technologies as "dry quench," phenol recovery, a water-conserving closed loop design such as used in South Africa been left out of the design? Since the promises to the public of "best state-of-the-art the world provides" (Mr. Curtis, Ashtabula hearing, 14 August 1978) do not appear to be met by what has been disclosed concerning the mill design, how are these matters to be resolved?

Response AHC-5:

While undertaking the conceptual design of the proposed Lakefront plant, the applicant sent study teams to observe, discuss, and review the latest proven developments in iron and steelmaking technology in all the major steel-producing countries of the world, such as Japan, South Africa, and Europe. The applicant then evaluated the merits of the various technological innovations and compared them against its own experience and that of the rest of the domestic steel industry. This led to the identification of the preferred process engineering combining the best technological features appropriate for the proposed plant. The result is the conceptual engineering design as described for both process technology and environmental control technology in the EIS.

"Best Available Technology" actually defines the levels of discharge parameters allowable from a control method that the USEPA determines is the best available at the time of a particular project review.

*Standards of Performance for New Stationary Sources.
**National Emission Standards for Hazardous Air Pollutants.

The U.S. Supreme Court has ruled that the USEPA cannot insist on the installation of a specific technology but can insist that the levels of control meet the level obtainable through the defined best available technology." One example is the installation of the coke quenching. Although U.S. Steel does not intend to install dry quenching, the levels of emissions emanating from the choice of quench system must be equivalent or better than that met by dry quenching. Similarly, while there is no intention to recover phenol, the levels of phenol in the discharge are required to be lower than any phenol recovery system is capable of obtaining. The system to be installed relative to phenol destruction is what the agency currently views as best available technology. Water recycling as proposed by the applicant is currently defined by the USEPA as equivalent to or better than BAT.

Comment AHC-6.

Refer to A-12

Comment AHC-7:

We request clarification of the relationship that the current port enlargement project has to the proposal for the steel mill. Considerable bitterness has been created in connection with this set of issues, dating back to the road closings and the restriction of access of fishermen to a public fishing pier. The conveyor that now stands visibly next to the harbor may or may not be the conveyor that is mentioned in the permit applications. This whole area of concern deserves full disclosure.

Comment AHC-8:

We cannot let one agency of government impose land use decisions that have not been authorized by the full acquiescence of the citizens. Have permits been granted? Have there been hearings? Through what channels was the $19 million dollars for port modernization authorized?

Comment AHC-9:

To assist in disclosure of the above developments, we request an accounting of the changes in land use that have been effected since, say 1969, in the relevant area bounded by Conneaut Creek, Lake Erie, the Pennsylvania border, and I-90, by or on behalf of any of the following entities: Conneaut Port Authority, Pittsburgh and Conneaut Ore and Dock Company, Bessemer and Conneaut Railway Company, U.S. Steel Corporation. This should include, with dates, the vacating of the roads through action of Conneaut City Council, the demolition of cottages, the closing off of access to the public pier, the clearing and regrading of the land north of the Conrail track, any filling of wetlands in tributaries to Turkey Creek and Conneaut Creek.

Response AHC-7, AHC-8, AHC-9:

Public hearings were conducted by the Corps of Engineers for the purpose of acquiring information that will be considered in evaluating the Department of the Army permit application on the proposed Lakefront Steel Plant. These hearings allowed concerned citizens to present their views on the proposed plant. Verbatim hearing records were entered into the project file and will be considered before the decision is made to issue or deny the permit.

The activity currently underway adjacent to the proposed steel mill site is totally independent of the proposed mill project and deals solely with expansion of a coal facility and water pollution control program of the Bessemer & Lake Erie Railroad and the Pittsburgh & Conneaut Dock Company. Coal facility expansion is a separate project designed to provide coal to power plants in Ontario. The above activity is neither related to the proposed Lakefront Plant nor applicable to the analysis of primary environmental impacts.

The water pollution control program is proceeding under a permit from the Ohio Environmental Protection Agency. This permit not only covers the construction of facilities for collection and sedimentation, but also the evaluation to determine if further treatment is required.

The Bessemer and Lake Erie Railroad prepared an environmental impact assessment for the coal facility expansion project. Permits required for this project were obtained from the appropriate regulatory agencies, which included the Corps of Engineers and the Pennsylvania Department of Environmental Resources (PADER). The Corps permit concerned construction of bridges across Conneaut Creek, while the PADER permit was issued for the installation of culverts. On 26 November 1976, the U.S. Coast Guard issued a public notice for the subject bridge construction, but later advised the railroad that no permits were required.

Paul Williams, Mayor of the City of Conneaut, reported that Woodworth Road north of the Conrail tracks and a portion of Lake Road off Woodworth were closed on 1 December 1970 by a vote of City Council. Since most of the adjoining land had previously been bought by the Bessemer and Lake Erie Railroad Company and the Pittsburgh and Conneaut Dock Company, these companies requested that the roads be closed. The area was to be used for storage of ore and coal. Thompson Road north of the Conrail tracks was closed on 23 December 1976. Areas adjacent to this road were proposed to be used as a coal storage area and new railroad yard by the Pittsburgh and Conneaut Dock Company and the Bessemer and Lake Erie Railroad Company.

Owners of cottages on U.S. Steel property were given time to remove their dwellings or portions thereof. The remaining structures were demolished since they were unsafe. Land easements for fishermen access to the East Conneaut Breakwaters have never been provided by the applicant. Boat access to the breakwaters is still available. Corps of Engineers regulations published on 25 July 1975, established a headwaters limit for each river and stream identified as a water of the United States. Specifically, this limit was defined as the point on a nontidal stream above which the average annual flow is less than five cubic feet per second. On 19 July 1977, these regulations were revised and again printed in the Federal Register. Under these new regulations, certain discharges are authorized by nationwide permit, thereby eliminating the need to submit a formal permit application or process it in accordance with conventional procedures. Activities involving the placement of dredged and fill materials in waters above the headwaters limit and their adjacent wetlands are specifically included in the nationwide permit authorization.

The clearing and grading referred to in the comments involve construction of a railroad yard parallel to and immediately north of the Conrail tracks situated to the east of Conneaut Creek. During construction, a total of six tributaries were culverted and backfilled by construction contractors working for the Bessemer and Lake Erie Railroad. Four of these empty into Turkey Creek, while the other two are tributaries to Conneaut Creek. During our investigations, the average annual flow of all tributaries was found to be less than five cubic feet per second. Thus, the work performed in these water courses was above the headwaters limit and authorized by nationwide permit.

In summary, the placement of culverts in each of these tributaries does not constitute a violation of Section 404 of the Clean Water Act. On 29 September 1978, both the Pennsylvania Game Commission and the U.S. Fish and Wildlife Service were advised of this determination in writing.

Comment AHC-8:

Refer to AHC-7

Comment AHC-9:

Refer to AHC-7

Comment AHC-10:

Now, in a straightforward attempt to develop an adequate Environmental Impact Statement, with the "full disclosure" that will permit a determination of whether or not the building of such a mill is in the public interest, are we to deal with the persistent rumors that United States Steel Corporation is not actually intending to construct the mill, but may be using this debate to promote somewhat different goals? Should we ask to know every land purchase by U.S. Steel and its subsidiaries? Do the words of Edgar Speer, filmed for the public meetings this summer, represent the Corporation's agenda? During the long months during which the EIS was in preparation, the newspaper reports of the steel industry's desires fluctuated considerably. Where does this historical project fit in?

Response AHC-10:

Representatives of the U.S. Steel Corp. are not promoting different goals, but have been vocal supporters of tax reform which they believe is necessary to permit accrual of capital funds to construct new facilities. Documentation of each and every land

purchase by the corporation or its subsidiaries would have no bearing on this analysis and is well beyond the scope of the environmental impact statement process.

Comment AHC-11:

Refer to A-17

Comment AHC-12:

What can be done, through this document which has to be seen a landmark in national policy, to dispel the mythology about JOBS? We have suffered the disruption, at our public meetings of the members of the construction industry who, in fact, are the most mobile element of our work force, so that they, least of any, have a stake in one site, over another. Their jobs are just as good, rebuilding in Youngstown as starting fresh in Conneaut; perhaps there is even more labor, in fact, in rehabilitation, since there would have to be a certain amount of demolition in advance of modernization where the site is already built upon. The rhetoric about CREATING JOBS must be refined so as to distinguish WHICH JOBS? and JOBS WHERE? And certainly the price tag must be displayed, in each instance, where the "profitability" of a new plant is contingent upon vast outlays by township or county or State governments for the needed infrastructure.

Response AHC-12:

Most of the discussion of employment impacts in the EIS has focused on long-term jobs in plant operations rather than temporary construction jobs. The applicant projects that approximately 7,600 additional permanent jobs would be held by original residents if the proposed plant is built in Conneaut. Even though construction jobs are temporary and construction workers are highly mobile, local construction workers would receive earlier and longer-term employment at a project under the primary jurisdiction of their own union locals.

As discussed in Chapter Six of the EIS, rounding out or adding capacity at Youngstown would not be a substitute for the proposed project. While the applicant is looking at expanding steelmaking capability at several of its facilities (and has already done so at Fairless, Pennsylvania, and Fairfield, Alabama), there are limits on the amount of capacity that can be added to existing plants. The applicant believes that it will not be able to maintain its market share and supply future demand without building a new "greenfield" plant that is situated close to expected future growth markets.

The proposed project would not require the outlay of Government funds to insure profitability. The industrial infrastructure including port, rail lines, and highways is already in place at Conneaut. Population-serving infrastructures in the Local Study Area municipalities and school districts would need to be expanded if the proposed plant is built. While total expenditure requirement and tax collections would increase, individual residents are expected to have lower tax bills because of the plant-related increase in the tax base (refer to Chapter Four).

Comment AHC-13:

In order to evaluate the relative costs, of a lakefront site and a site that is inland, we not only must postulate a value for perserving the shoreline, but we need to state the true costs, probably expressed in Btu, of rail transportation compared with water-borne systems. In the absence of any meaningful user charges for lake shipping, we must calculate the subsidies to shipping that lie in the proposed winter navigation program, the enlargement and deepening of the locks and connecting channels for the lakes, the port enlargements currently underway, and the relationship of all of these to the new dangers that will come if we acquiesce in the introduction of longer and longer ships. This nexus of costs, which would be externalized through claimed "economies of scale", is by no means fully understood.

In the above connection, it is important to understand better the benefits of rail transportation. There is considerable evidence that this offers the "low energy path". Where costs and delays are related to current contracts with labor unions these must be recognized as human artifacts, subject to redesign through accepted democratic processes. The inexorable realities of the Law of Gravity and the Second Law of Thermodynamics cannot be negotiated.

Response AHC-13:

The Lakefront plant presents an advantage over inland facilities, in that transportation of raw materials is provided exclusively by lake vessels, which utilize less Btu per ton-mile than rail. An inland plant would require transhipment of raw materials and an additional rail haul which would increase the energy required for transportation per ton of steel delivered to end users.

Comment AHC-14:

What has been learned from the attempt to speed up the process of preparing the Impact Statement? It was in February 1977 that we read that "U.S. Steel's Board Chairman, Edgar Speer, is putting a 1 January 1978 date on the study to accommodate his corporation's need to process more steel by the early 1980's" (Conneaut News Herald). Considering the average time for completion of an EIS is taken to be 36 months, which of the innovative techniques that have been tried, in concurrent engineering design and impact analysis, have proved to be just as informative as the older sequential procedures? Which areas have suffered? Will this experience encourage Federal agencies to try to accelerate future EIS preparation, or does this experience show that there is indeed an irreducible minimum?

Response AHC-14:

The only departure from conventional procedure involved the establishment of an interagency technical team. This multidisciplinary group was composed of representatives from the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, Federal Regional Council, Department of Commerce National Marine Fisheries Service, Pennsylvania and Ohio agencies, and the U.S. Steel Corporation. The technical team provided a forum for discussion of the many issues and concerns which were related to the Lakefront steel plant proposal.

Perhaps the most important advantage of the team concept was the opening of the lines of communication between the applicant and the regulatory agencies. This approach eliminated adversary relationships and allowed us to get at the facts necessary to develop a thorough and accurate Environmental Impact Statement. Another benefit realized during this process involved the saving of time. In this regard, team members and the officials of the U.S. Steel Corporation were able to deal with one another directly on matters related to the collection of baseline data, field studies on the Lakefront site, and compliance with regulatory guidelines and standards. Without such interaction, the applicant could have provided data that were inappropriate for agency review thereby prolonging the regulatory process.

In summary, the team concept was found to be an effective time-saving mechanism for the review and evaluation of complex proposals such as the Lakefront steel plant. During the many months the technical team approach was used, we did not encounter any instances where the environmental assessment process suffered. Further, we have every reason to believe that this process will be used in the future since it leads to a more definitive analysis of environmental impact.

Comment AHC-15:

Because many environmental insults go up in intensity as the third power or the fourth power of the various dimensions of the new facility, would you make a rough calculation of the relative burdens to the ecosystem of this proposed single vast plant, and then compare this with the burdens, distributed, of two plants, each half the capacity. Also (if this seems fruitful) for four plants, each a quarter the capacity. Amoco Steel, we have heard, has found it profitable to have smaller plants, nearer their markets. Would these gains, in adapting more closely to the assimilative capacity of the air and water (and, presumably, the social environment) help to balance significantly against the economies that certainly seem, in the present design, to accompany the plan to have three blast furnaces, together? Or, from another approach, would three blast furnaces, but smaller, at each of two locations, be easier to live with? (This scaling question is, of course, becoming increasingly urgent in the planning for sewage treatment plants where instream flows are better maintained if a number of dispersed smaller plants return the water close to its point of extraction).

Comment EPA-37:

EPA believes that alternatives are available to mitigate or prevent the loss of Turkey Creek. A detailed evaluation of the following alternatives should be provided:

a. Reduced Plant Size and Preserved Stream - If it is decided that the Conneaut site is to be the only site considered, the applicant should address the possibility of scaling down the facility. There is no discussion of this alternative in the DEIS. Such a size reduction may allow construction of a plant on the site without unacceptable impacts. Turkey Creek and associated site wetlands could be left intact with adequate buffer areas between them and the plant to preclude their serious environmental impact. A smaller plant would also qualify other location alternatives.

Response AHC-15, EPA-37:

The size of the proposed plant is determined by the design production capacity which has been established by the selection of product forms needed to serve the market (primarily hot-rolled strip supplemented with plate). Design production capability is governed by the hot strip mill equipment for production of sheet steel, the principal product of this plant. Current investment and operating costs for a hot strip mill dictate that it should have an annual capacity of several million tons to be economically viable. For the cumulative yields of finished hot-rolled strip and sheet from rolling slabs in the hot strip mill, continuous casting of raw steel to slabs and refining the molten iron to steel, a modern hot strip mill plant should have steelmaking capability about 25-30 percent greater than the strip mill capability to assure that the latter will be able to attain design production rates. The ironmaking capability of the blast furnace also must be comparable to provide the requisite molten iron for the production of steel.

Plant size alone does not necessarily correlate with the magnitude of environmental impacts to be expected from a new facility. The proposed plant would be constructed with modern technology and would be subject to current air and water quality discharge limitations. The Ohio and the USEPA, through the NPDES permitting program, have the responsibility of regulating industrial point source discharges which would be produced by the proposed plant. Air emissions will be regulated by the USEPA through the PSD permitting process.

Comment AHC-16:

What is the basis for U.S. Steel's anticipation of an increase in demand for steel in the 1980's? We have heard about the need to replace all the highways and bridges, and rebuild all the (very steel-intensive) steel mills. But does this represent a future with rationed gasoline, reduced GNP, frugality in energy use, a shift from planned obsolescence to an acceptance of the moral imperative of maintenance and rehabilitation?

Response AHC-16:

The anticipated increase in demand is based on industry evaluations, investigations performed by independent sources, and studies conducted by the applicant. The consensus based on projections of national economic policies and population estimates is that

the domestic consumption of steel will continue to grow for the balance of this century, although at a reduced rate of 2.2 percent compared to an annual rate of 2.5 percent in the post-World War II period. The 1978 U.S. Industrial Outlook published by the U.S. Department of Commerce projects that the growth rate of steel consumption for the next five years should continue at the average rate of 2.6 percent a year, as has prevailed in the country since 1960. These studies indicate that the major share of the future growth in demand will be for flat-rolled product to be used for construction of energy storage and transportation facilities, including tanks, pipelines, and ships, mining, processing, and manufacturing equipment and machinery, containers, cans, and packaging products, rail and highway system improvements, as well as buildings, appliances, automobiles, and trucks.

Recent domestic annual production capacity to meet this demand has been about 158 million tons of raw steel, which yields about 110 million tons of finished mill products. Further, it is assumed that the penetration of the domestic market by imported steel will probably remain constant at its current share. To meet the foreseeable demand, the domestic production capability for raw steel is projected to need an increase of about 30 million tons by the mid-1980's. Although 60 percent of this requirement could be obtained from roundout of existing plants, the balance, of about 12 million tons, would need to come from new "Greenfield" plants, such as the proposed Lakefront steel mill. It is important to point out that these increased production needs are in excess of those required to meet replacement capacity requirements.

Comment BA-1:

The Council of the borough of Albion wishes to call to your attention inaccurate information in the Draft Environmental Impact Statement (2-444) regarding our water system. The DEIS indicates that the system serves "a total population of about 2,000," however, the system actually serves about 2,850 people. The DEIS is accurate in indicating that daily consumption is about 160,000 gallons. The information on the size of the reservoir is also correct. We take strenuous exception to the statement that the daily design capacity is about 600,000 gallons. The borough is now suffering a major water shortage, and we have in six days trucked in more than half a million gallons of water just to meet minimum demand. In terms of the capacity of the wells to produce water, it is doubtful if we can even sustain the 160,000 gallons per day that our users require. The pumps are capable of pumping about 120,000 gallons per day at best; the rest has come through gravity flow. Moreover, our antiquated distribution system most probably could handle little more than 160,000 gallons per day. We have few eight-inch lines, and many street lines are two inches or less. We believe that the description as it stands in the DEIS would lead readers to mistakenly believe that the borough has a more than adequate water supply and system. The fact is that we have a long-term water shortage and an inadequate system. We trust that you will take whatever steps are necessary to fully correct this very serious deficiency.

Comment CRG-30:

4.592 The potential impacts of secondary development on water quality are not sufficiently addressed. The baseline problems of inadequate water supply in northwestern Pennsylvania would be intensified, yet are not even mentioned.

Response BA-1, CRG-30:

There was no intent to lead the reviewer to the conclusion that the borough of Albion has a more than adequate supply of water. The description of this system was merely based on available data. The Corps staff recognizes the fact that there is a periodic water shortage problem in this borough and acknowledges the additional information provided in Comment BA-1.

The influx of population into northwestern Pennsylvania associated with the proposed plant would exacerbate existing water supply problems and create problems in some of those areas currently without central water supply systems. Water shortages can be avoided only if timely actions are taken by the appropriate governmental agencies at the local level. Estimates of projected increased water demands and the costs of meeting these demands are discussed in Chapter Four of this Final EIS. The estimated costs reflect a complete analysis including any necessary upgrading of intake pumps and treatment facilities and any necessary expansion of the distributing system.

Comment BTS-1:

The DEIS has a serious omission in the area of waste heat recovery. Expensive means of cooling large amounts of generated waste heat are discussed, with little regard to the possible application of this valuable form of energy. In no way can this be considered "state-of-the-art" technology.

While the DEIS states, "...several individual operations will have waste heat recovery," it goes on to say that space heating will be provided by either steam or electric space heaters. An onsite generator will provide this power by burning coal. The consideration of using electrical heaters (one of the most inefficient means of space heating) in the same facility where waste heat is abundant, is nothing less than absurd. Care is taken to assure that emission standards for particulates and sulfur dioxide from the burning of coal will be met. However, no guarantee of sound conservation is made to minimize the amount of coal used.

In light of the above information and the sources noted, the Final Environmental Impact Statement would be incomplete without:

a) a complete listing of all waste heat, including temperature ranges and energy equivalents.

b) a complete discussion of planned heat recovery equipment and projected savings of fossil fuels.

c) a complete analysis of the pros and cons of heat pumps, Rankine cycle engines, and waste heat energy cascading. Explaining why these and other systems will or will not be used.

Response BTS-1:

The applicant plans to maximize the use of waste energy recovery systems in the proposed Lakefront plant that are presently justifiable from an economic standpoint. Additional recovery systems would be incorporated into the facility as the cost of energy increases or new technology becomes available.

Electrical space heating is only planned for isolated areas of the plant that cannot be serviced by the conventional steam supply system.

All waste heat flows (including temperature and gas) which are a by-product of combustion or process heating exhaust streams are listed in Chapter One of this statement. A complete analysis of the various heat recovery systems, as suggested in the above comment is beyond the scope of the environmental impact assessment process. However, the applicant has advised that the economic feasibility of various waste energy systems would be examined during the detailed engineering design phase.

Comment CAM-1:

I understand that in the long run the mill will increase employment in this area only 1/10 percent. Against this, an influx of labor from other sections will add to our inflation. Welfare costs, for workers moving in and losing their jobs, will be an extra burden on Erie County. Higher cost of living will be hard on those not employed by the applicant and hardest on those with fixed income.

Response CAM-1:

Increases in the cost of living resulting from an influx of plant-related labor and income are expected to be limited principally to housing prices in a relatively circumscribed geographic area. Chapter Four of the EIS describes the anticipated cost of living impacts and the reasons that they are expected to be fairly modest. Housing prices in most of the Coastal Communities would probably be affected, but other components of the cost of living would probably only be impacted in the immediate Conneaut-Springfield area. Residents of the city of Erie, for example, would probably not experience any detectable plant-related price increases.

While it is true that increases in the cost of living are hardest on those with low or fixed incomes, the type of price increases created by the proposed project would have little effect on these residents. Higher housing costs would provide fewer opportunities for relatively low-income younger families who want to leave apartments and purchase a single-family house. Similarly, elderly persons on fixed incomes might be affected by higher rents for apartments or higher prices for other items. On the other hand, it is also possible that the older homeowners whose children no longer board with them could realize a higher than anticipated price when they sell their houses. Overall, it is not expected that residents of the study area would experience "boom town" inflation as an adverse impact of the proposed project.

The predictability of the relationship between the proposed project and welfare cases and costs is addressed in the Social Services section of Chapter Four of the EIS. The specific issue raised concerns those workers who move into the study area and then lose their jobs. Workers who are laid off would be eligible for unemployment benefits (not welfare) as they wait to be called back or look for other jobs. Moreover, in-migrant workers who lose their jobs at the plant (for any reason) and could not find other jobs might very well leave the study area. A study on family mobility done for the U.S. Department of Labor by the Rand Corporation listed as one of its principal findings:

> "Recent arrivals who are unable to find acceptable employment are especially likely to move again and to return to places where they have lived before."

In Pennsylvania, the principal "welfare" program - Aid to Families with Dependent Children - is funded by the Federal and State Governments. Therefore, an increase in the number of these welfare cases in Erie County would not have an impact on county costs.

Comment CAM-2:

Refer to ADM-1

Comment CAM-3:

Extra costs, which will result in higher Erie taxes, will be enormous: water, sewage treatment. It will be a drain on utilities.

Response CAM-3:

Water and sewage treatment costs, in particular, are usually financed by user charges rather than taxes. More important, the plant-related population increase in Erie would not be large enough to make significant demands on utilities. The projected population increase in Pennsylvania outside the four Coastal Communities is estimated to be less than 1,000 persons by 1990. This area includes the southern parts of Erie County and Crawford County. The current population of the city of Erie is more than 100,000. Therefore, even under the highly unlikely assumption that all these in-migrants settled in Erie, the impact would be less than one percent of baseline population and should be readily accommodated by existing or planned infrastructure. Simply, this means that there would be no requirement to raise Erie taxes as a result of the proposed project.

Comment CAM-4:

Many jobs may be lost if Erie tourism is affected.

Comment CAM-9:

Influx of extra people may mean that vacationers, who stay here and spend their money here, may be crowded out by people just driving over for the day, who simply add to the cost of protecting the peninsula recreation and cleaning up.

Comment CRG-38:

5.19 The recreation mitigative measures spoken of all cost money, yet the study does not indicate where the funds would come from. Higher taxes perhaps?

Comment DW-34:

Interviews with Crawford County tourist board, where effects will be minimal, were used, instead of Erie County tourist board, where effects could be disastrous.

Comment PHCOE-27:

"...interviews with Crawford County Tourist Board, where effects would be minimal, were used instead of Erie County Tourist Boards where effects could be disastrous."

Comment RJM-1:

Concern is primarily pertaining to the effect that the steel plant will have on Presque Isle State Park. This park, as I'm sure you're well aware, receives millions of visitors each year. It is an ecological reservation which provides immeasurable happiness to the visitors who flood here each year. I would venture to guess that it is one of the few State parks which is used so extensively, year round.

Response CAM-4, CAM-9, CRG-38, DW-34, PHCOE-27, RJM-1:

Approximately 3.5 million individuals from several adjoining States as well as the Commonwealth of Pennsylvania visit Presque Isle State Park each year. The projected level of population growth represents only a small fraction of the total number of visitors utilizing this recreational facility. Thus, it is highly unlikely that plant related daytime visitors would crowd out longer-term vacationers using the park.

Individuals involved in the management of recreational facilities or recreational planning were interviewed prior to the preparation of this Environmental Impact Statement (refer to the working paper on recreation which was appended to the draft EIS).

Mitigation for primary impacts caused by construction and operation of the Lakefront plant would be funded by the U. S. Steel Corporation. However, the costs associated with mitigation measures not directly attributable to the project would be paid through the issuance of municipal bonds, user fees, or tax revenues. Federal funds may also be utilized as in the case of Walnut Beach Park (Ashtabula City) where anticipated improvements would be paid for under the provisions of the Land Conservation Act.

Comment CAM-5:

Jobs in agriculture will definitely be lost. Remaining agriculture will undoubtedly suffer due to pollution increase, "acid rain."

Comment EDH-36:

Volume 1, page XIII, (#17)--if acid rain increases, what will be implications with respect to fish, wildlife, loss of property, corrosion of limestone, etc.?

Comment PFC-4:

Page xii, (8) (1.7). The sulfur dioxide could also cause acid rains which could effect the Pennsylvania Fish Commission hatchery facilities at several locations east of the proposed plant.

Response CAM-5, EDH-36, PFC-4:

Plant induced changes in pH are not expected to have any impact on the productivity of native vegetation or agricultural species. The projected decrease in rainfall pH under worst case conditions would amount to 0.03 unit. This minute change would have a minimal effect on the pH of surface waters.

For example, during the storm event of 13-14 September 1977 in which the pH range was found to be 4.6-4.3, the flow at Station TC-4 (upper reach of Turkey Creek) increased substantially from less than 0.5 cfs to nearly 60 cfs. During this event the stream pH declined to 4.1 or less than one unit below ambient levels which is well within the acceptable range for all indigenous aquatic organisms, including salmonids.

On 16-17 November 1977 another storm event occurred in which the pH of the rainfall was found to be about 4.4. During this storm the streamflow increased from 5 cfs to 45 cfs, while the pH decreased from 7.4 to 7.1.

The above examples illustrate that even under baseline conditions the decline in pH is not sufficient to have an adverse impact on the aquatic biota. Thus, a plant related decline in pH level amounting to 0.03 unit would have no significant impact on the above concerns.

Comment CAM-6:

Erie is already a crime cancer area, we should not make it worse.

Comment DW-22:

6. Since cancer rates are already high in this area, steelmaking in th' air basin would contribute significantly to our cancer rates. Cancer rates for c. oven workers are incredibly high and 20 out of every 100 workers in steel plants are stricken by one form or another of cancer.

Response CAM-6, DW-22:

The death rate due to malignent tumors for white males in Erie County, PA, was reported to be 190.8 per 100,000 while for the entire Commonwealth of Pennsylvania the rate was cited as 83.08 (Atlas of Cancer Mortality for U. S. Counties, 1950-1969, DHEW Pub. No. (NIH) 75-780, USGPO Washington, DC 1974; U. S. Cancer Mortality by County, 1950-1969, DHEW Pub. No. (NIH) 74-615 USGPO Washington, DC, 1973). For Ashtabula County the rate was 178.5 per 100,000 whereas the entire State of Ohio was calculated to be 174.6. The mortality rate for the entire United States during this period was reported to be 174.04 per 100,000.

These data indicate that the cancer mortality rates have been greater than those reported for other counties in Pennsylvania but less than those observed in other urbanized areas of the Commonwealth. The rates for Ashtabula County were 0.1 per 100,00 higher than those observed for the entire State.

A study of mortality among steelworkers employed during the period 1953 through 1961 showed that coke oven workers contracted lung cancer 2.5 times more frequently than other workers. Variations in the incidence of mortality appeared to be related to the work area, race, and duration of employment. The incidence of a relatively rare cancer of the kidney was also reported to be significantly high. Overall, the study reported that 20 percent of the observed deaths were due to cancer, but 40 percent were attributable to heart disease (Long-Term Mortality Study of Steelworkers, I. Methodology, W. Lloyd, et. al. Journal of Occupational Medicine, 1969).

The above data were collected prior to the implementation of current pollution control technology. For example, coke oven coor seals have been improved to minimize emissions containing potentially carcinogenic substances. Regulations have also been promulgated by the Occupation Safety and Health Administration to protect workers responsible for coke oven operations (29 CFR 1910, Section 1029). If the study on steelworkers, cited above, were repeated, the mortality rates would likely be lower due to increased pollution control and tighter safeguards for employees.

Atmospheric emissions and effluent discharges from the proposed plant would be required to meet all applicable standards and guidelines. These limitations have been established to protect the health and welfare of the general public. In the case of the Lakefront facility the responsibility for compliance with the various regulatory standards and guidelines rests with the U. S. Environmental Protection Agency, the State of Ohio, and the Commonwealth of Pennsylvania.

Comment CAM-7:

Refer to A-18

Comment CAM-8:

Urban Sprawl, as predicted in the book "1984."

Response CAM-8:

Under baseline conditions, land development in the Regional Study Area is anticipated to increase about one percent or 1,420 acres in the Ohio Regional Study Area, and approximately six percent or 3,920 acres in the Pennsylvania Regional Study Area by 1990 (refer to Table 4-242). The plant-related land use demand was expected to cause development of an additional 1,215 acres of land in Ohio and 845 additional acres in Pennsylvania (both exhibit individual growth rates of about one percent). Also, the concentration of this growth was projected to be greatest in Conneaut and Springfield. Thus, the proposed project is not expected to cause urban sprawl, but would probably contribute modestly to an acceleration in the already slow rate of urbanization. However, the adverse effects associated with rapid growth can be curtailed or even eliminated through the use of realistic land use planning techniques and practical zoning regulations.

Comment CAM-9:

Refer to CAM-4

Comment CAM-10:

If there is a fish kill, or people get sick and even die due to water or air pollution, will U S. Steel abandon the mill or will there simply be lawsuits and promises for future improvement? Will fish or people be brought back to life?

Response CAM-10:

Through the issuance of an NPDES (discharge permit) for the plant, the State of Ohio and the U.S. Environmental Protection Agency will be taking preventative actions to insure that the discharge does not result in fish kills or harmful health effects. These preventative actions include the requirement to install Best Available Demonstrated Technology to limit the chemical discharge and the requirement to prepare discharge monitoring reports. If the applicant violates the permit, the U.S. EPA can obtain a court order to shut the plant down until proper modifications are made.

Comment CCD-1:

Page 2-158, Table 2-89: Information used is accurate as of the 1970 Census of Housing. However, updated information is available in the 1976 Housing Assistance Plan. Most important is that the vacancy rate was 3.5 percent in 1976 compared to 7.6 percent in 1970. Presently, the city is experiencing a tight market for persons searching for rental units.

Response CCD-1:

Statistical information presented in the housing baseline was taken from the 1970 Census of Housing because it represents the latest consistent source of data for all of the study area communities. However, additional qualitative and quantitative information was derived through interviews with realtors and local officials and the review of other recently published reports. The extremely low housing vacancy rate in the study area was recognized during the assessment of impacts on housing. Thus, it was concluded that all permanent housing demand created by new residents would have to be met by new construction because of the lack of available surplus single-or multi-family housing in the area.

Comment CCD-2:

Page 2-578, Table 2-270, Page -614, Table 2-282. Discrepancies were found in the Existing Land Use for Conneaut. Land use information has been updated as of 1978 and is as follows:

LAND USE	ACRES	PERCENT OF TOTAL AREA	PERCENT OF DEVELOPED AREA
Single-Family	2,420	14.4	56.8
Multi-Family	26	0.2	0.6
Commercial	276	1.6	6.5
Service	59	0.3	1.4
Industrial	122	0.7	2.9
Cultural, Entertainment, and Recreation	205	1.2	4.8
Transportation	1,154	6.9	27.0
TOTAL DEVELOPED	4,262	25.4	100.0
Agricultural, Vacant Land	12,508	74.6	- -
TOTAL ACREAGE	16,770		

Page 2-622, Table 2-296: Discrepancies were found in the information given concerning the amounts of land zoned in Conneaut for various usages, primarily in B-3, M-3, and A-1. The following are the correct allocations of land by Land Use Zones for Conneaut at the present time.

ZONES	PERCENT OF CITY LAND AREA
S-1 Special Use	10.4
A-1 Agricultural	38.6
R-1 Suburban Residential	7.7
R-2 Urban Residence	8.4
R-3 Urban Residence	4.3
R-4 Urban Residence	2.7
R-5 Seasonal Residence	1.8
B-1 Neighborhood Business	less than 0.001
B-2 Neighborhood and Commercial Business	3.7
B-3 General Business	1.0
M-1 Restricted Industry	1.-
M-2 Industry	0.8
M-3 Heavy Industry	16.9

Page 2-633, Table 2-302: Calculations concerning Projected Baseline Land Use for Conneaut as based on the Simpact IV Model would differ due to discrepancies found in the baseline data.

Response CCD-2:

Land use statistics contained in the Draft EIS were derived from countywide sources and compiled by the Eastgate Development and Transportation Agency (EDATA) during

1977. The revised 1978 statistics (refer to Table 2-292 of this statement) were compiled by the Conneaut Planning using updated aerial photographs as their prime information source. Comparison of these data indicate that in 1978 a greater amount of land was classified as residential and commercial while the total acreage in the industrial category has decreased. Also, the revised data show that the acreage of the city has risen by 440 acres.

Changes reflected in the commercial and industrial categories are most likely the result of a change in the classification of specific land parcels. For example, the Pittsburgh and Conneaut Dock Company property is considered industrial land in the EDATA study and public transportation land in the Conneaut Planning Agency Study.

Incorporation of the revised data into the analysis of land use impacts yields a reduction in relative plant related growth in Conneaut from 21 to 19.7 percent of baseline land use. This change is due to the proportionately higher baseline residential use reflected in the revised data.

The revised data on land use and zoning are acknowledged. However, revision of the above referenced tables cannot be accomplished due to the lack of consistent categorical definitions for the various land use types.

Comment CCD-3:

Refer to ADM-3

Comment CCD-4:

Pages 4-466 - 4-475 Secondary Land Use Requirements. (Comments also pertain to two related Working Papers, New Residential Housing Requirements and Land Use Requirements.)

Projected land use requirements for single-family residential purposes are based on national trends and lot sizes. However, instead of 4 dwelling units an acre as found in the working papers, present zoning in Conneaut allows for:

R-1 1.45 - 2.9 dwelling units/acre
R-2 3.5 dwelling units/acre
R-3 5.8 dwelling units/acre

Vacant land available in Conneaut for residential uses is primarily zoned R-1 and R-2. In addition, there is a shortage of land available for multi-family development. These calculations would alter projected land use changes for residential uses as well as alter the cost of other related services the City would need to provide.

Response CCD-4:

The projected lot sizes for single-family housing types were based on current and projected practices of local developers and would meet the current residential zoning requirements in Conneaut. One, two, and four units per acre were the designated single-family housing types. In Conneaut, areas zoned R-1, R-2, and R-3 allow from one-five units/acre.

As shown in the review of Conneaut Zoning regulations in Chapter Two of the draft EIS (Table 2-297), areas zoned R-4, B-1, and B-2 allow multi-family dwellings of two or more units. These areas comprise 6.1 percent of the town's acreage, or 1,006 acres. According to 1975 statistics, the total number of existing multi-family units was 995. The EIS projections require an additional 190 baseline multi-family units by 1990 (1,185 total) and an additional 365 multi-family units under impact conditions (1,550 total). Using the lowest density multi-family housing type and its corresponding land use requirement, there would be more than an adequate supply of land zoned for these projected levels of multi-family housing in Conneaut. The townhouse category (eight units/acre) requires the greatest corresponding amount of land (1.125 acres/unit). Using this land use requirement, existing multi-family housing would comprise 125 acres. Under both baseline and impact conditions, an additional 75 acres is projected to be required (total 220 acres). While a portion of the 1,000 acres available for multi-family usage is already developed or could be developed for other permitted industrial or commercial uses, it is considered likely that the 20 percent required (i.e., 200 acres) would still be available for the projected amount of multi-family usage.

Comment CCF-1:

Pages 2-427, 2-432, 2-433: The figure 3,875 is used as the number of customers served. The actual number of accounts is over 6,000.

Page 2-439, paragraph 2.352: An estimate of $200,000 to $300,000 worth of refurbishing is stated. Our current backlog of essential maintenance and replacement is:

a)	Elevated tank cleaning and painting	$ 85,000
b)	Pump repairs/replacement	65,000
c)	Support equipment	60,000
d)	Distribution Line Cleaning	200,000
e)	Distribution Valve repair/replacement	50,000
f)	Replacement of undersized lines	1,500,000
g)	Looping of system	750,000
	TOTAL	$2,710,000

The entire system also requires a meter replacement program with an estimated cost of $200,000.

Response CCE-1:

In response to these comments, Tables 2-219 and 2-221 and paragraph 2.348 have been corrected to show that the total number of customers served is 6,000.

The estimates presented in paragraph 2.352, indicate that the current water supply system required $200,000-$300,000 (1975 dollars) worth of refurbishing to maintain both the central supply system and the current distribution system. However, the City Engineer currently estimates that approximately $2.7 million current dollars (approximately 2.1 million 1975 dollars) of backlog maintenance is required. In addition, the system is in need of a meter replacement program which is expected to cost $200,000 ($160,000 in 1975 dollars). The Corps staff acknowledges this information and has revised the appropriate paragraph.

Comment CCE-2:

Page 2-449 paragraph 2.372: The statement is made that "Most of the existing sewage systems have oversized interceptor sewers..." The City of Conneaut has very few interceptors that fall in this category. In fact, under existing conditions, many of our interceptors are surcharged during storm periods.

Response CCE-2:

The sentence has been reworded in response to the comment.

Comment CCE-3:

4) Page 2-480 figure 2-31: The figure shows an actual traffic flow of 5,319 for that portion of Route 7 north of US Route 20. An actual traffic count conducted in July, 1978, showed over 10,000 vehicles per day using this section of road. The City is in the process of building a grade separation at the Norfolk & Western Railroad and Route 7 crossing. It is expected that the completion of this project will increase the ADT on this route. Due to the above, the projection in Figure 2-32 must be revised. If the magnitude of error is the same for the other traffic counts taken in Conneaut, this entire section on traffic should be reworked.

Comment CCE-9:

Traffic and Transportation Facilities: As mentioned earlier, the traffic count used for State Route 7 north of US 20 in the year 1990 has already been exceeded; therefore, the traffic data on the other streets are in question. The City is presently experiencing traffic problems at the intersection of SR 7 and US 20 which in the opinion of most citizens is now at service level E. Imposing additional traffic on this condition will be intolerable to City residents.

Response CCE-3, CCE-9:

The Average Annual Daily Traffic (AADT) data used in the draft EIS represented the latest available information at the time this document was prepared both in terms of current and projected (1990) values. These data were furnished by the ODOT and PDOT and are based on recent actual counts and projection formulae developed from historic trends. Each of the figures referenced in the above comment contain as many as one hundred AADT values. The Corps staff acknowledges the fact that the AADT levels may change based on actual traffic counts. However, revision of the EIS to include the results of a single traffic count is not considered appropriate since it would not substantially affect the conclusions regarding plant related impacts on transportation.

If some of the AADT values are low, the principle effect would be that some intersections in the 1981-1990 timeframe might be at a lower level of service without the proposed plant, than is presently projected under baseline conditions. The reviewer is also advised that traffic counts taken in the month of July are almost always higher than the AADT and may not be representative of traffic flow conditions.

Planned construction by the city of Conneaut of a grade separation at the Norfolk & Western Railroad and Route 7 crossing should eliminate the long standing problem of highway traffic interruption on Route 7 by trains. Although this may cause an increase in AADT on this section of Route 7, the net effect should be decreased congestion and an improved level of service.

Comment CCE-4:

Page 4-351 paragraph 4.300: The additional water main installation of about 3.2 miles is insufficient to accommodate the projected population increase. The City is presently preparing plans and specifications for about one mile of water main installation and the master plan being developed indicates the need for about four miles of water main to correct low pressure areas and to loop the system. There are also several miles of 4-inch water main that needs to be replaced to provide the proper fire flow requirements.

The operating costs for the water system are also understated for the year 1990. As of August 1, 1978, the City had to raise the water rate to generate an additional $52,000 per annum to meet the current operating expenses. Additional funds must also be generated to meet the current backlog of essential maintenance and future capital improvements.

Response CCE-4:

The estimates reported in the EIS reflect the increases in service needs that would be required to accommodate the plant related increase in population. These projections do not include current or future baseline needs since these would occur regardless of plant construction.

Some areas in northwestern Pennsylvania have water supply problems which have been aggravated by low ground water levels in recent years. Those municipalities with the most severe problems include Albion Borough and, to a lesser extent, Girard Borough. The Borough of Albion has advised that their system serves about 2,850 people and that the current capacity barely equals the daily user requirement of 160,000 gallons. Both the central supply system and the distribution system are inadequate to support further development or growth. During the Summer of 1978, the Borough experienced a major water shortage that required the trucking in of water. Financial assistance requests for municipal water system improvements in both Boroughs were recently denied by Federal and State agencies.

Comment CCE-5

6) Page 4-366 paragraph 4.308. This paragraph states that no new interceptors will be required to serve the steel plant induced population increase. It goes on to say that expansion of the system into east, south, and the west will be required. The expansion of the system into eastern sector of the City is underway with the installation of an interceptor sewer. Due to the topography of the southern-sector of the City, the most logical method of serving this sector is through the installation of a large gravity interceptor. Preliminary planning has already begun on this interceptor. The expansion of the system to the western sector of the City has severe problems due to the size and gradient of the present system. Also, portions of the present system become surcharged during storms. The most practical method of supplying sewer service to the western sector may be by installation of an interceptor from the western sector directly to the plant by-passing the older dilapidated central portion. If these solutions are adopted, the cost projection to expand the sewer system to meet future requirements is understated.

Response CCE-5:

The estimates may be understated in light of the new information contained in the above comment. However, most of these costs would remain part of the baseline expansion cost as indicated in the following table (millions of 1975 dollars).

	Interceptors	Plant	Total
Baseline Expansions	$4.9	$0.0	$4.9
Impact Expansions	1.1	0.6	1.7
Total	$6.0	$0.6	$6.6

Thus, an estimated total of $6.6 million in new sewage facilities was projected for Conneaut by 1990 of which $4.9 million was expected to be needed even if the mill were not built.

Comment CCE-6

I feel the time frame stated of 1979 for the start of system expansion is valid, however, as is evident, we are already behind the power curve due to the fact that our EPA Step I Facilities Plan is not complete and we do not have the tax base at present to proceed with the minor expansion not covered by the Facilities Plan.

Response CCE-6:

The EPA has indicated that due to a lack of funding, Springfield Township could not be funded for a new Step 1 facility plan until 1982 at the earliest. The DEIS was written based on the assumption that construction of the mill would begin in 1979. While rapid action on a facility plan would be required to assure adequate facilities in service during the impact period, such scheduling is not impossible.

Comment CCE-7:

Page 4-385 table 4-196 and paragraph 4.318 In view of the statement in paragraph 4.318 that Conneaut possibly requires total replacement of the existing storm sewer system, I find it very difficult to arrive at the conclusion given in Table 4-196 that the city will only have an expenditure of $210,000 by 1990. I agree that our entire storm sewer system is in need of complete rehabilitation with major portions requiring replacement. The funding of this construction will more than likely be acquired through assessment and general fund receipts.

Response CCE-7:

The total replacement of the existing network (of ditches) in certain sections of Conneaut is possibly required under baseline conditions, and would require an expenditure in excess of the $210,000 amount reported in Table 4-196. This figure reflects only the additional impact of the population influx induced by the plant.

Comment CCE-8.

Page 4-389 table 4-198 - Projected Population Changes The methodology used in making this projection must be questioned as the 1990 baseline density has been exceeded as of August 1978. The present density is 1.1. I do not feel that the city has had unusual growth during the three years that have elapsed since the 1975 baseline figure was calculated. This higher growth figure casts doubts on the requirements for infrastructure expansion as shown in the draft EIS.

Response CCE-8:

The discrepancy in population density is probably due to the acreage base used in the calculations. The density calculations used in the EIS are based on an area of 17,545 acres (27.4 square miles) for Conneaut. A current density of .87 persons per acre is derived utilizing this base (15,200/17,545). Alternatively using a current density of 1.1 and estimated population of 15,200 would imply a total land area of 13,850 acres or 21.6 square miles. This latter figure is inconsistent with the latest estimate of 16,770 acres provided by the city of Conneaut. The best estimate of present density, therefore, is .91 persons per acre, assuming that Conneaut has 15,200 people and 16,770 acres (15,200/16,770).

Comment CCE-9:

Refer to CCE-3

Comment CCE-10:

I feel that the preferred action discussed in paragraph 4.354 is a sound solution, however, it should be supplemented with the construction of the US Route 20 bypass similar to that shown in the alternatives. I feel that this bypass should also be part of the Route 2 Freeway. The relocation of SR 7 to the east of it's present location into the Conneaut Creek Valley would also greatly reduce future traffic congestion in the central business district of the City. This relocation of SR 7 is shown in the Comprehensive Plan prepared in 1967 by Carroll V. Hill and Associates.

Comment CRG-40:

5.52 This section fails to address itself to the negative impact increased traffic would have on road conditions. In addition, forces promoting the extension of Route Two into Conneaut have already used the proposed mill as justification for this venture. The study should address the problems this might cause.

Response CCE-10, CRG-40

Implementation of both the US-20 bypass plan and the I-90 direct access plan would substantially increase the cost of highway network improvements with only a nor benefits to traffic flow. Use of only one plan would be much more appropriate.

The majority of the traffic bound for the proposed plant would be concentrated on the direct access from I-90 and the extension of US Route 6A. Addition of the US-20 bypass might improve conditions in the center of Conneaut but would have little effect anywhere else. On this basis it would be difficult to justify the significant increase in cost without being able to effect a more widespread improvement in traffic conditions.

The proposal to build a Route 2 extension and the decision to connect it to the US-20 bypass, assuming it were to be built as well, is not influenced to any great extent by the presence or absence of the Lakefront plant. Traffic volume on the US-20 bypass is projected to be well below capacity even with the contribution of the proposed plant and would not represent a constraint to the possible connection with Route 2.

If the US-20 bypass were built, there would be no advantage to relocation of SR-7 since the northbound traffic on this route (with the exception of those bound for Conneaut) would turn onto the US-20 bypass and avoid Conneaut. Without the bypass, 1990 traffic projections for the I-90 direct access case between the hours of 7-8 a.m. (rush hour) indicate that the only plant related traffic on SR-7 between I-90 and US-20 would consist of an estimated 22 automobiles heading south from the intersection of US-20. If SR-7 were relocated to the east of its present position, it would be the result of baseline traffic conditions rather than the proposed plant. There are more than 400 baseline vehicles on this segment of highway during the 7-8 a.m. rush hour or 20 times the amount of projected plant-related traffic.

Comment CCM-1:

The Turkey Creek question has not been adequately addressed, the proposed solution of completely eliminating this coldwater stream is unacceptable. Other alternatives should be investigated before accepting the proposed solution. I believe this could serve as a recreational area for United States Steel employees and their families. With today's modern technology, it is feasible to save the stream, the water, and the air.

Comment CRG-23:

4.494 The destruction of Turkey Creek is unacceptable. The fact that the applicant held to this position only confirms this company's environmental arrogance. The statement that the applicant does not expect the impacts of construction on Raccoon Creek and Conneaut Creek to be significant is without documentation and/or justification, and therefore is without any value.

Comment CRG-36.

5.14 The compensatory measures for the loss of Turkey Creek are unacceptable.

Comment EPA-35:

EPA strongly opposes the proposed relocation of Turkey Creek. Turkey Creek has been shown to be a valuable, somewhat unique aquatic resource. It is habitat for such clean water fishes as Coho Salmon, Chinook Salmon, Brown Trout, and Rainbow Trout. It appears to be a spawning area for some of the above species as well as for various pike, bass, and minnows. The creek is one of only nine coldwater streams in the entire state of Ohio. It is one of only two such streams with its mouth on Lake Erie. While Turkey Creek is not quite as unique in Pennsylvania, it does represent a valuable, relatively unspoiled stream and its destruction represents a major adverse impact.

Comment EPA-36:

The proposed relocation involves transforming the present natural stream into a drainage ditch. Such a transformation is unacceptable for the following reasons.

The design of the ditch would reduce the length of the stream from its current 96,000 feet to 79,000 feet.

The ditch would not provide even the basic elements of viable aquatic habitat. The desirable species which presently occupy Turkey Creek require relatively clean, clear water; gravelly, rocky substrate, submerged grasses, favorable riffle/pool ratios, streambank and in stream cover, and a diversified, health population of benthic invertebrates to survive. The proposed ditch would supply none of the above. The ditch would have a silty, unstable substrate which when coupled with expected water quality would support nothing but the most pollutant tolerant organisms. Because the ditch would not be bordered by tree cover, water temperatures are likely to rise and as a result dissolved oxygen concentrations would drop. For the first 14,000 feet of ditch, the water within it, according to the EIS, would be relatively stagnant, allowing it to heat up and concentrate pollutants. Because the stream bottom in this section and others would consist of newly exposed, chemically reduced sediments, oxidation would occur resulting in reduced aquatic D.O. and increased pollution. The flat, unriffled bottom would do little to increase D.O. Finally, the last 2,000 feet of channel would have an extremely steep gradient which would create a barrier to fish migration.

The ditch has the potential to significantly effect unaltered portions of Turkey Creek and other streams. Upstream areas of Turkey Creek currently utilized as spawning and nursery ground by many species of fish would be unavailable. The ditch would accelerate watershed drainage thereby leaving untouched streams with less flow during low periods. This decreased flow may destroy habitat and increase water pollution.

Comment EPA-45.

An alternative which should be evaluated, by itself or in connection with other alternatives, is a mitigation plan, acceptable to the concerned Federal and State agencies, to compensate for the loss of part or all of Turkey Creek.

The plan could concentrate on enhancing and improving existing aquatic resources in the project area and instituting some measures that would minimize or prevent water quality degradation from occurring as a result of secondary development.

Part of the mitigation plan could include Dr. Andrew White's recommendation that U.S. Steel be required to protect and increase a potential spawning habitat in and around the mouths of Conneaut Creek and Raccoon Creek, as well as along the lakefront. Another measure, to enhance Conneaut Harbor, would be to divert Conneaut's wastewater discharge to an area outside of the harbor. A number of innovative enhancement measures could be developed for mitigation. Although this mitigation approach has been mentioned in our comments on the environmental assessment, we have yet to see the applicant propose any measures that could be included in a mitigation plan.

Comment KEE-1:

First, I see no reason why it is necessary to build the steel mill in an area which includes two salmon streams that will be destroyed during construction. Turkey Creek will be reduced from a length of 96,000 feet to 74,000 feet and channeled into Conneaut Creek through a ditch 16,000 feet in length. Not only will this construction destroy the mouth of Turkey Creek, but it will also produce enough silt to destroy Conneaut Creek from the confluence of the channel to the lake. The Environmental Impact Statement says that an erosion control device would be built at the confluence of the two streams, but no mention is made of building silt control devices along the length of the proposed channel. I feel it is easy to understand how 16,000 feet of unprotected, freshly exposed soil would turn the mouth of Conneaut Creek into a mudflat. It is little wonder that the State of Ohio would terminate the stocking of salmon in this watershed. Turkey Creek and Conneaut Creek are two of only nine streams listed by the Ohio Environmental Protection Agency as being coldwater habitat. Is it so important that the steel mill be built at this site that nearly one fourth of the cold water habitat in Ohio be destroyed? I have heard that a compromise meeting will be held to solve the problem of Turkey Creek. My viewpoint is that the only way to prevent both Turkey Creek and Conneaut Creek from being permanently damaged is to build the steel mill at another site. No amount of rebuilding or relocating could protect Conneaut Creek from the pollution created by the world's largest steel mill. You must remember one thing, if you pollute the mouth and the waters offshore you will kill a salmon and steelhead stream just as surely, as acid mine waters draining into the headwaters of a trout stream will kill fish below the polluted tributary. The salmon and trout have brought new life to Lake Erie. The steel mill would end it.

Comment NAS-3:

We had hoped to find the subject of mitigation covered more fully. In considering the diversion of Turkey Creek we feel it is necessary to consider the loss of the creek and the associated habitat, the value of the fisheries, and the effect on the water quality and aquatic life of Lake Erie.

Comment PDER-9:

The proposed changes or possible elimination of Turkey Creek is one of primary concern to the fish and game management agencies of the Commonwealth. Further consideration needs to be given to preventive and mitigative actions for this stream in order to receive favorable consideration of the application for a 404 permit.

Comment PFC-1:

Page iv, Number (11). The filling of Turkey Creek is completely unacceptable to the Pennsylvania Fish Commission. This stream supports a coldwater fishery for trout and salmon and should be protected.

Comment PFC-3:

Page xi, Primary Impacts, Number 1. The diversion of Turkey Creek via a ditch to Conneaut Creek is unacceptable. To replace a viable fishing stream with a ditch cannot be condoned. The loss of this stream to migratory fish (in Ohio) would be a great loss to the developing anadromous fishery.

Comment PFC-9:

Pages 1 261 and 1-263. Because the relocation of Turkey Creek is unacceptable, we must object to any disposal area using any part of the Turkey Creek ravine.

Comment PFC-10:

Page 1-267 (1.345). The diversion of Turkey Creek and filling of existing stream bed is unacceptable.

Comment PFC-12:

Page 1-274 (1.349). The fill and diversion of Turkey Creek is unacceptable.

Comment PFC-13:

Page 1-364(g)(1.461). Section 404 gives EPA authority to restrict fill which would damage fish habitat (including spawning and rearing areas). The fill required to divert Turkey Creek into a diversion channel will certainly damage, in fact eliminate, fish habitat. We believe EPA and the COE will be delinquent in their responsibilities if this habitat destruction is permitted.

Comment PFC-19

Page 4-584 (4.494). The adverse impacts associated with placing Turkey Creek into a ditch are completely unacceptable.

Comment PFC-25:

Page 4-768 (4.668). "Once Turkey Creek is diverted into a drainage ditch..." Is this an accepted conclusion, that Turkey Creek will be diverted?

Comment PFC-26:

Page 4-775 (4.684) to page 4-783 (4.695). Since diversion of Turkey Creek is totally unacceptable, the resulting habitat destruction is unacceptable.

Comment PFC-32:

However, U.S. Steel is apparently unwilling to accept either the eastward relocation or the green belt concept. The Pennsylvania Fish Commission is unwilling to accept the channelization to Conneaut Creek. Perhaps there are other alternatives that should be studied and considered.

Comment PGC-21:

Paragraphs 6.107 through 6.113 (pages 6-68 and 6-69) discuss a possible setback of plant structures to preserve existing Turkey Creek and some of the adjoining terrestrial habitat. Here again, the proposal is discussed in insufficient detail, and the applicant has made another unilateral decision not to investigate it further. We cannot see the logical reason for any culverting or filling as discussed in paragraph 6.109.

Comment PGC-24:

Alternatives to the filling of Turkey Creek and construction of a diversion channel to Conneaut Creek are needed to overcome Game Commission objections and recommendations against issuance of the necessary Corps of Engineers 404 permits. They must be presented in sufficient detail to allow proper evaluation.

Comment OEPA-6:

Regarding Turkey Creek: We view the loss of Turkey Creek as a serious matter, but it does serve a relatively few people. We believe there are mitigation measures which will provide far greater improvements to the Ohio fishery. We urge consideration of installing the creek in a culvert and discharging the water in the present outlet area so that the beach fishery will be maintained. We realize that access will be from the water, but this area will only support a few fishermen. We will insist on full mitigation of the project's impact on Turkey Creek. We believe these mitigation measures must be listed in the EIS if the public is to find this feature of the project acceptable.

Comment STP-1.

Storm Water Management

One of the more sensitive issues addressed in the EIS is the relocation of Turkey Creek. The proposal is to divert the waters of Turkey Creek into a diversion channel approximately 16,000 feet in length along the north side of the Penn Central Railroad to an outfall into Conneaut Creek (See Attachment "A").

This proposed channel, based on the size and configuration shown on Page 4.2.3...-17 of the Draft EIS and a slope of .0044 feet/foot which is interpolated from the USGS Quadrangle map, yields a capacity of approximately 225 cfs.

Preliminary runoff estimates indicate that approximately 1,650 cfs of storm water could be expected from a fifty year storm based upon existing development, and approximately 2,200 cfs based upon ultimate development. These figures are based upon the tributary watershed area upstream from the proposed beginning of the relocation (Point "A" on Attachment Maps).

It should be noted that based upon these calculations the proposed channel will only transport approximately 10% of a 50 year peak flow. We are attaching copies of our calculations for review. The method utilized was the method of the U. S. Department of Agriculture, Soil Conservation Service. A second problem exists in that several small intermittent streams exist which cannot flow by gravity into the proposed relocation, however, these streams must have outfalls.

We suggest that more direct routes to the lake for this proposed rechanneling should be evaluated. We offer the following possibilities (See Attachment "B").

a. Continue Turkey Creek north along where Rudd Road currently exists to a Lake Erie outfall.

b. Parallel the railroad tracks eastwardly to an outfall in Raccoon Creek.

Both of these routes have two distinct advantages:

a. Shorter channel distance

b. Increased channel slope

Response CCM-1, CRG-23, CRG-36, EPA-35, EPA-36, EPA-45, KEE-1, NAS-3, PDER-9, PFC-1, PFC-3, PFC-9, PFC-10, PFC-12, PFC-13, PFC-19, PFC-25, PFC-26, PFC-32, STP-1, PGC-21, PGC-24, OEPA-6:

In response to comments made by the agencies and the general public, the applicant has rejected the original proposal and adopted a new plan which calls for culverting a portion of Turkey Creek and eliminating the diversion channel. Under the new plan, Turkey Creek would be culverted between State Line Road and a point approximately 460 meters (1,500 feet) upstream from Lake Erie. The culvert would have an inside diameter of 3.66 meters (12 feet) and is expected to provide adequate drainage during a 100-year flood event. Approximately 2,226 meters (7,500 feet) of winding streambed would be straightened to permit installation of a culvert 1,707 meters (5,600 feet) in length. In order to encourage upstream salmonid migration, the applicant proposes to install a system of baffles and resting pools and a skylight system which will provide subdued lighting along the entire length of the culvert.

Low flow characteristics of Turkey Creek present a formidable barrier to salmonid migration under both natural and project-related conditions. Recognizing this problem, the applicant proposes to augment flow rates during peak migration periods by diverting a portion of the plant intake water into the upstream end of the culvert. The 3.8 kilometer (2.4 mile) reach of Turkey Creek on the Lakefront site upstream from the culvert would be preserved in its natural state, and would be available to Pennsylvania Fish Commission personnel for research or management purposes. The Ohio Division of Wildlife would be encouraged to use the lower 460 meters (1,500 feet) of Turkey Creek extending from the mouth to the proposed culvert as a salmonid stocking and nursery area. Stream habitat improvements would also be initiated by the applicant in an effort to enhance fish spawning potential. In addition small craft access to the mouth of Turkey Creek and the adjoining beach area would be provided for fishermen.

Relocation of plant structures has been advanced as an alternative solution to the culverting of Turkey Creek. Examination of this option by the applicant indicates that water quality standards could not be guaranteed in this section of the creek due to surface runoff from the plant site, deposition of airborne particulates, and accidental spillage at bridge crossings. In addition, the culverting would be necessary to insure the efficient operation of the proposed Lakefront plant.

Comment CCM-2:

The proposed plant will be emitting air pollution that falls within the EPA's Class II guidelines. It is my opinion that with the present state of technology, that a very limited amount of air pollution should be put forth by this mill. Considering the quality of air in Conneaut at present, would the emissions that fall within the allowable Class II limitations be the kind of air that is presently found in Cleveland and Ashtabula - just what are the Class II guidelines?

Comment JB-8:

Conneaut at present has less pollution than most other cities in Ashtabula County. The steel mill will greatly increase air and water pollution in the entire area.

Response CCM-2, JB-8:

The applicant will be required to submit an application to the USEPA and/or authorized State permitting authority in accordance with the 19 June 1978 Prevention of Significant Air Quality Deterioration (PSD) regulations. The PSD review will include analysis of the proposed facility under Best Available Control Technology. Additionally, the requirements of Lowest Achievable Emissions Rate (LAER, will pertain to this facility. The LAER and BACT requirements will insure limitation of emissions to the greatest degree possible through currently available technology. A copy of the PSD requirements and explanation of Class II areas were forwarded to the Mayor's office on 20 November 1978 in response to his comment. While emissions from the proposed facility will increase the ground level concentration of pollutants, the plant is not expected to degrade air quality to the extent that Conneaut would experience the type of air quality found in highly industrialized urban areas. The monitor data for Cleveland and Ashtabula indicates that the standards for particulates were exceeded at several locations in these cities during 1976. These same areas have thus been declared by EPA as nonattainment. Since the projected levels in Conneaut are expected to be below the standards, it can be assumed that the air quality in Conneaut would be better than that presently found in Cleveland and Ashtabula.

Comment CCM-3:

The comments made by Arthur D. Little concerning the water quality, especially those effluents such as Phenol, is completely unacceptable to this office. Any further polluting of Lake Erie, especially considering our past efforts of trying to clean the lake, should be looked at carefully.

Response CCM-3:

The primary control technology used at the proposed plant would be derived from data collected on toxicity and bioaccumulation at two other U. S. Steel Corporation mills. In addition, the applicant has also collected some baseline data on toxic residues in fish and expects to perform additional monitoring as the facility is completed and phased into operation. It is probable that studies would also be conducted by the USEPA and the States of Ohio and Pennsylvania to determine whether instances of toxicity and bioaccumulation can be correlated with plant operations.

Potentially, toxic substances in the effluent of the proposed Lakefront plant would be present in low concentrations. Incorporation of a high energy diffuser system into the discharge pipeline would insure rapid mixing dilution and subsequent assimilation of the chemical constituent present in the effluent. The applicant has investigated the possibility of water supply contamination and concluded that toxic substances would not be detectable at any of the potable water intakes or in the vicinity of the Lakefront plant site.

If any parameter is found to be present in the plant effluent at concentrations considered potentially harmful by the USEPA the applicant would effect the necessary treatment to reduce the concentration to acceptable levels. Both the Ohio Environmental Protection Agency and the U. S. Environmental Protection Agency are responsible for regulating industrial point source discharges that would be produced by the Lakefront plant under the NPDES permit program. During the review of the permit application, effluent limitations will be established to achieve compliance with water quality standards through the application of control systems that represent the best available technology. Prior to reaching maximum production capacity, the applicant will be required to submit reports which contain the daily monitoring results for the plant discharge. From these data the above agencies will determine if the final effluent limitations are achievable when the plant attains production capacity. The NPDES permit will also contain a schedule for compliance with final interim effluent limitations as well as interim limitations as various process units are brought on line. Both the USEPA and the State of Ohio have the authority to take enforcement action should a violation of effluent limitations occur.

Comment CCM-4:

Comments made by Arthur D. Little concerning trace elements, especially those that can accumulate sublethal levels in aquatic life, could pose a potential danger to fishermen; both commercial and sport. Again those amounts are not acceptable.

Comment CRG-49:

5.122 This section notes that some heavy metals and trace elements may accumulate in the tissues of aquatic organisms. As this might well result in the loss of Lake Erie as a fishery, and as Lake Erie provides more fish than any other of the Great Lakes, much more study is needed on this point. Until this matter is completely investigated, the issuance of permits cannot even be considered.

Comment DW-1:

Due to lack of suitable on-lot sewage systems, temporary (package) sewage treatment facilities will be needed. These will be built to handle sewage from trailer parks for example. These trailer parks or housing developments will be prime housing locations for construction and steel maintenance workers and their families. "These systems...would have an adverse impact on the small, environmentally sensitive streams that exist in this portion of the Lake Erie drainage basin." (3.8; p. 3-4) Some of these streams are Raccoon Creek, Conneaut Creek, Turkey Creek and Duck Run. These adverse effects would be increased algae growth, increased siltation, decreased game fish population and losses in traditional spawning areas, especially for Walleye. This problem will be most severe in Springfield Township, West Springfield Borough and the older part of Conneaut City. (3.8; p. 3-4)

Comment EDH-1:

We have looked at the proposed effluent parameters found in the DEIS and can concur with the statement that under normal circumstances, the effluent would have no significant adverse affect on Lake Erie. However, we do not concur with the findings on worst case scenarios. On page 4-821 of the DEIS, the statement was made indicating that during 1977 sampling the threshold pH of 8.2 was not recorded in the summer of 1977. This office is aware of numerous near-shore studies done in recent years in Lake Erie which indicate that a pH of 8.2 or greater was commonly found at times in summer months. The annual report of selected analyses and monitoring of Lake Erie Water Quality, 1974, prepared for the Commissioners of Erie County, Pennsylvania, indicated that the pH of 8.2 was exceeded at station #4 (near the proposed plant) every time that the station was recorded during that season. This is important because of the relationship between ammonia-nitrogen (NH_3-N) and pH. At pH levels above 8.2, ammonia becomes increasingly toxic to aquatic life, and the assumption that the ammonia levels in the effluent will not be inimicable to aquatic life cannot be accepted as valid by this office. On page 4-594 of the DEIS, there is a statement that the pH may exceed 8.2, however, no mention was made in the DEIS that other studies done in the area of the steel mill routinely indicated pH above 8.2. The DEIS discussion of ammonia did cover the toxicity of this chemical species but made little or no mention of the possible algae blooms followed by fouling of bottom and beaches in the area and the eventual decrease in oxygen as decomposition takes place. In view of the recent government studies that indicate phosphate loading seems to be stabilizing in Lake Erie while ammonia was increasing, it would seem that some address should be made to avoid compounding nitrogen (ammonia) problems and possible subsequent algae blooms in the downstream area.

Comment EDH-29:

4-680 (4.573) This Department is somewhat concerned over the statement, "However, the runoff, even when treated, will probably contain relatively significant concentrations of heavy metals and trace elements." It appears this may be a problem, especially if the waste discharges to the Turkey Creek streambed. Our question specifically is what is "significant" and what effects will the "significant" discharge have on the receiving waters.

Comment EDH-41:

XIV (#22) For years, we have generally heard that, except for thermal effluents, dilution is not the solution to pollution, however, this seems not to be the case in this proposal. What metals will accumulate in the organisms? What effect will it have on the reproductive potential of the organisms? What effect will it have on commercial fishing activities on Lake Erie, both with respect to quality and quantity of the fish?

Comment PFC-2:

Page viii-ix, Number (19). Increase in sewage loads and the resulting increase in BOD and phosphorous loading of area waters by 2.1-3.7 percent could cause enrichment problems in the streams and at their mouths on Lake Erie.

Comment PFC-6:

Page xv (9). Some of the local streams are already stressed due to sewage. An increase in BOD and nutrients could cause serious problems.

Response CCM-4, CRG-49, DW-1, EDH-1, EDH-29, EDH-41, PFC-2, PFC-6.

The comments advising that increased nutrient and BOD loadings from additional baseline and/or secondary development could create or exacerbate enrichment related problems in small streams in the Regional Study Area coincide with the concerns conveyed by the Corps in the Draft EIS. Additionally, recommendations to mitigate or prevent these impacts were included in Chapters Four and Five of this document. The means to prevent many of these impacts lies within the permit review and enforcement authority of Ohio EPA, Pennsylvania Department of Environmental Resources, and the USEPA.

With respect to the potential nutrient effects of the proposed plant on Lake Erie, it is believed by the applicant's consultant that threshold concentrations for nutrients in the central basin have not been determined. There is a considerable range of speculation on the subject, but the results of the recent sampling programs conducted for this and other projects in the central basin consistently indicate more than enough phosphorous and nitrogen derivatives are available to support nuisance algal blooms. This suggests that other factors (e.g. light penetration or micronutrients) presently limit the extent of such nuisance growths in the central basin, and that increments added by the proposed plant should not result in noticeable or significant increases in algal growth. However, if it should be determined that discharges from the proposed plant will result in unacceptable nutrient problems, the applicant is committed to reduce the amounts of any constituents in its discharge to levels acceptable to the USEPA.

The comment by the Erie Department of Health indicating that there are records of pH levels above 8.2 in the lake during 1974 is acknowledged. However, monthly averages made by the Ohio Department of Health in 1973 near the Conneaut City water intake in Lake Erie indicate that only during September and October did the pH approach 8.2. The pH during October 1973 was recorded at 8.0 and during September was 8.1. During all other months the values were below 8.0. Staff does not believe that the routine occurrence of pH above 8.2 is the case but rather that pH can exceed 8.2 under certain baseline conditions. Staff concurs that during periods when pH exceeds 8.2, the toxicity of ammonia increases. Since the issuance of the Draft EIS, the applicant has revised the plant design to include equalization lagoons. This should reduce the projected "worst case" ammonia concentrations in the effluent to levels below those assumed reported in the EIS.

Additionally, the USEPA has expressed concern about violations of water quality standards during the "typical" and "worst case" scenerios. The USEPA will require th-

prior to any issuance of an NPDES permit, the proposed effluent limitations and/or discharge part design must be altered. No permit will be issued in accordance with Section 402 of the Federal Clean Water Act where violations in water quality standards will result.

A new section summarizing nutrient input to Lake Erie from the proposed plant has been added to this Final EIS. Ammonia is also discussed in this section.

The levels of metals in the proposed discharge are essentially the same as those in the ambient lake. That is, the applicant indicates that virtually no net additions of metals would be present in the plant wastewater discharge. Although some of the ambient levels may continue to correspond to levels reported to result in bioaccumulation, the mitigation of that situation is beyond the scope of this EIS and the regulatory responsibility of the Corps of Engineers. Chapter Five of this Final EIS has been modified to more clearly reflect this situation. The term "relatively significant" was used in Chapter Four to mean "detectable at levels above background." It was not intended to imply that the concentrations of metals and other trace elements in the runoff from solid waste disposal areas would be "significant" in terms of impacts on stream biota. Two factors mitigate against this possibility. First, disposal of solid wastes in the Turkey Creek ravine is no longer proposed by the applicant. Second, the applicant has agreed to meet such additional requirements for quality of nonpoint source discharges as may be applied by review agencies. Thus, the opportunity to limit metals and trace elements in runoff to acceptable levels is within the jurisdiction of the Ohio EPA, USEPA, and Pennsylvania DER. The USEPA has advised the Corps that the primary toxic control technology likely to be applied at the proposed plant is undergoing toxicity and bioaccumulation tests at two other U. S. steel mills. Further, it is likely that this agency together with the State of Ohio and the Commonwealth of Pennsylvania would institute a monitoring program to identify instances of bioaccumulation that could be attributed to the proposed facility.

Comment CON-1:

Refer to ADN-3

Comment CON-2:

Due to low population estimates, tax data has been misrepresented. The assumption made by the A.D. Little Co., that workers will commute to the proposed Lakefront plant negates the assumption made that these same workers will pay tax in the local impact areas.

Response CON-2:

The tax analysis is directly related to the applicant's employment and population projections and the individual tax codes of the affected communities. (The reviewer is cautioned that other population projections exist that reasonably predict an increase of 11,000 to 58,500 new residents (refer to Chapter Four)). The assumption that workers would commute to the plant, either from other study area communities or from outside the Regional Study Area, is in no way inconsistent with estimated tax revenues. As stated in Working Paper X: (which was appended to the Draft EIS), in Ohio the municipal income tax is levied primarily on a place-of-work basis. In Conneaut, a one percent income tax is levied against the payroll of all employees working in the city regardless of place of residence. (In the Pennsylvania portions of the Local Study Area, a different tax code applies and a different estimating approach was used.) As long as the number and payroll of new jobs created in Conneaut remains the same, the city will collect the same amount of income tax revenue regardle of whether the job holders are original residents, in-migrants to the city, or commuters.

Comment CON-3:

The subject of housing shortages during the construction period has not been adequately addressed in the draft environmental impact statement. Thus, no alternatives have been provided to planners who might otherwise hope to lessen a possible housing squeeze.

Response CON-3:

Housing shortages resulting from the interaction of baseline population growth and the in-migration of both construction and operations workers are discussed in the housing section of Chapter Four of the EIS particularly in terms of supply bottlenecks and price effects. The comment is unclear as to why the discussion of housing shortages is considered inadequate. Since the housing market is primarily a private sector province, it is unclear what options planners would have to "lessen a possible housing squeeze." Most of the options and alternatives to offset the effects of a shortage of housing have to do with the choices of individual home buyers or renters.

Comment CON-4:

Socioeconomic factors related to post-plant construction

a. Again, population estimates are too low. The worst case possibilities have not been adequately discussed in the Draft EIS.

b. The adverse effects on local nonunion industries have been sidestepped by the A.D. Little Company. Again, to say that history shows no problems to this sort of industrial investment is a flagrant attempt to circumvent a crucial issue.

c. The loss of jobs to those industries already situated in the impact areas has not been addressed. It is felt that because of higher pay base offered at the proposed Lakefront facility, local industries will either be forced to raise wages at

their respective plants in hopes of keeping the employment force and to thereby risk lower profit margin or to seek a quick relocation of the industry to an area more suitable to the present wages already paid out by the company.

Response CON-4:

Other population projections exist that reasonably predict an increase of 11,000 to 58,500 new residents (refer to Chapter Four). The incremental increase of these new residents may have an adverse impact on the various socioeconomic areas listed throughout the statement. Using multipliers provided in Chapter Four, the reviewer can extrapolate the impact that the various scenarios may have on populat or.

Overall, there is not expected to be a substantial tightening of the labor market since the anticipated decline in unemployment is projected to be rather modest. The possibility exists that certain experienced or highly valued employees would be able to command higher wages than current employees, however, these cases are likely to be few. The extremely high costs of industrial relocation are most likely to preclude this as a reasonable reaction to potential minor labor cost increases. Since the Regional Study Area is currently in a relatively high labor cost area (the North Central manufacturing states), it is probable that firms located there are less sensitive to labor costs than to other location factors (e.g., proximity to suppliers and customers, access to raw materials, available transportation and distribution channels).

Comment CON-5:

Cost figures given throughout the Draft EIS have been based upon the U. S. dollar at its 1975 value. A reference is made to figures quoted in the Draft EIS when the matter of wastewater treatment and storm water control is discussed. It is mentioned that local municipalities within the primary impact zones will need to upgrade their present systems in order to accommodate the influx of new residents to the areas. The cost for such upgrading is figured on a 1975 dollar value.

Comment CRG-19:

4.233 The expectations of tax reductions are so ludicrous as to be laughable, if this was not so serious a matter. These expectations hinge on two factors, the extremely low population estimates, and an implicitly assumed lack of inflation. The first assumption has already been dealt with. As for the second, when one realizes that the government expenditures required are figured in 1975 dollars, the proported accuracy of this study is idiotic. One does not have to be an economist to know what has happened to the cost of living since 1975. Thus, the cost estimates for such things as sewers, water lines, schools, etc. are absurdly low, and have no resemblance to reality.

4.308 As is noted in 4.307 and mentioned above, the costs for sewer construction is figured in 1975 dollars, therefore this section is entirely without value.

Comment EPA-22:

Chapter 4, page 4-38, Table 4-193. The estimated "Sewer bill per household", with the assumption that the treatment plant will get 75% federal funding, is extremely high ($200-$300 per year). The figures in this table represent the total impact area and were estimated in 1975 dollars. In order to present a true picture, these figures should be updated to reflect current trends.

Response CON-5, CRG-19, EPA-22.

All monetary measures used in the impact section of the EIS are expressed in constant 1975 dollars to maintain consistency throughout the report. The staff agrees that the cost estimates reported in the Draft EIS have escalated as a result of recent changes in the economy.

An approximation of costs in 1978 dollars can be derived through the use of the consumer price index (CPI) which is compiled on a monthly basis by the U. S. Department of Labor, Bureau of Labor Statistics. The CPI measures the average changes in prices of all types of consumer goods and services purchased by urban wage earners and clerical workers using 1967 as the base year (1967=100.0). For example, in 1975 the CPI was 161.2, which means that for an item purchased in 1967 for $100.00 it would cost $161.20 to purchase the same item in 1975. In October, 1978, the CPI was 200.9, which means that to purchase this same item it would cost the consumer $200.90. Thus, the figures used in this Environmental Impact Statement can be converted to October 1978 dollars by multiplying the 1975 values by 1.246 (200.9 divided by 161.2). However, the reviewer is cautioned that the resulting figures are not exact costs but merely an approximation of current values.

Revision of the Final EIS to reflect the more recent values would not significantly change the relative magnitude of the resultant impacts and is therefore considered to be unwarranted.

Comment CON-6:

The assessment of the school system located in Conneaut in Conneaut, Ohio lacks accurate data. The A.D. Little Company spent but a few hours touring the actual physical layout of the system and also used data from an out-dated school system inventory.

Response CON-6:

Specific inaccuracies are not identified in the comment, so it is impossible to develop a detailed response. During the environmental assessment process data on

facilities from the 1971 school district master plan study were supplemented by information from city and county planning personnel as well as school district representatives. The identification of plant-related impacts on this school system does not depend on a detailed facilities plan, thus, the data gathered during the site visits are considered to be adequate.

Comment CON-7:

A. The Draft EIS assumes that there will be sufficient electrical energy available within the local power grid to provide an adequate source of such energy to the proposed plant. It is felt the plant will tax the power grid in mention and will thereby cause an energy shortage to present subscribers within the area.

B. If such power shortages do occur, it will be necessary to add to the electrical generating facilities more generating equipment. It is felt that this added construction will cause higher utility rates adding a burden to those on fixed and low incomes. It is also felt that assessment of the proposed COHO generating plant to be constructed in Lake City, Pa., was not made a part of the Draft EIS, either in the area of pollution or utility rates.

Response CON-7:

Under current project plans, sufficient onsite electrical generating capacity would be constructed to supply 25 percent of the operating needs for the Lakefront plant while the remainder, about 300 mw, would be purchased from outside sources. The regional electric power system serving the plant site could supply this power without creating any shortages for current users. By 1988, Cleveland Electric Illuminating Company is projected to have capability of 6,700 mw and average demand of 3,400 mw while Penelec would have a capability of about 3,150 mw and average demand of 1,950 mw (this includes the planned construction of Coho). These two utilities would therefore have "reserve" capacity of 4,500 mw on an average basis and about 1,800 mw on a peak basis (assuming peak demand is 1.5 times average demand). Thus, the primary plant requirement of 300 mw could be easily satisfied without impacting residential, commercial, or other industrial users.

Since the proposed plant and the associated secondary development is not expected to create electrical power shortages, there is no need for additional generating facilities. However, all three electric utilities serving the Regional Study Area have plans for system capacity additions under baseline conditions. The interactive effect of baseline additions, national inflation, and other factors on the future utility rate structure cannot be predicted and is beyond the scope of this impact analysis. The Lakefront plant would have no impact on these rates. Based on the information available, it is unlikely that the proposed plant would have any impact on the future costs of power consumption.

The environmental impacts associated with the construction and operation of the proposed Coho station will be discussed in a separate EIS now being prepared by the Region III Office of the U. S. Environmental Protection Agency. However, the combined effects of this facility and the U. S. Steel Plant on air quality are considered germane to the analysis and have been included in Chapter Four of this EIS.

Comment CON-8:

A. Because a complex mixture of chemical will be present in the waters of Lake Erie that surround the discharge pipe from the proposed plant, a suitable assessment of the effects on the aquatic biota has not been properly made. The ingestion of these chemicals by the plants and animals in the discharge region and the possibility of these plants and animals to alter the effects of these chemicals because of various metabolic systems, and a subsequent deterioration of the already fragile life systems within the lake has been completely ignored by the A.D. Little Co. in their draft EIS.

Response CON-8:

The primary control technology used at the proposed plant would be derived from the data collected on toxicity and bioaccumulation at two other U. S. Steel Corporation mills. In addition, the applicant has also collected some baseline data of toxic residues in fish and expects to perform additional monitoring as the facility is completed and phased into operation. Additional studies would probably be conducted by the USEPA and the States of Pennsylvania and Ohio to determine whether instances of bioaccumulation can be correlated with plant operations.

Comment CON-9:

A complaint pertaining to actual sampling times must also be registered at this time. The actual days of sampling ought to have been extended over a period of two years. This is necessary to come up with a complete assessment of the aquatic biota of Lake Erie.

Comment CW-30:

The short periods of time for all sampling (biological, weather, air temperature, etc.) were inadequate, thus making the studies inaccurate. This was most recently seconded by Roger Kenyon, a biologist and area fisheries manager of the Pa. Fish Commission. In an article in the Erie Daily Times on Aug. 15, 1978, he said, "Another year of 'very intense' sampling is needed to determine what type of fish losses might occur." (p. 18-A)

Comment LPT-2:

Short period of study. It seems as though only the best interests of U. S. Steel were taken into account when we consider the short time period (one year) and the green field crews that were used to gather the information (as a result of excessive subcontracting). As a result of this unprofessional action many important aspects of the study had to be omitted due to insufficient data.

Comment PFC-33, PFC-34.

The material pertaining to fish is in general inadequate as no attempt was made to estimate population sizes. To determine what impact a particular action is going to have, it is necessary to determine the population size to be impacted, not just the species composition. Unless the limitation or gear types are realized and accounted for in some manner, the fish collected should not even be used to show relative abundances of the species collected. Using a one-year study to say anything about reproductive successes can be misleading. Attempting to say much about the fish populations in Lake Erie with less than a four or five-year intensive study is basically guess work and, therefore, very inadequate.

Comment PHC01 37:

". . . I want to know why the responsible agencies permitted U. S. Steel to take the sampling time down from three years to one year. It seems to me this set an unfortunate precedent for any future economic development or industrial planned."

Response COM-9, GW-30, LPT-2, PFC-33, PFC-34, PHC05-37:

There is no legal precedent requiring the collection of baseline data for a two or three year period as indicated in the above comments. Usually site specific environmental data are collected for a twelve month period in order to take into account the seasonal variations and fluctuations in plant communities and fish and wildlife populations. In the case of the Lakefront plant site baseline biological, chemical, and physical data were collected over a fourteen month period beginning in April 1977.

The twelve month minimum for site specific field investigations is not uncommon for projects of this magnitude. For example, one year sampling effort have yielded adequate baseline data for projects involving steam electric generating stations, petroleum refineries, bulk cargo transshipment facilities and similar proposals with capital construction costs similar to those reported for the Lakefront steel plant. The baseline data reported in the Draft EIS did not reflect the results of ongoing field investigations during the Fall of 1977 and the Spring of 1978. The information is now available and has been incorporated into Chapter Two of this Final Environmental Impact Statement.

In addition, the applicant has been advised that supplemental aquatic sampling will be needed in the offshore areas of Lake Erie to determine the best possible location for the plant water intake. The total amount of time required to complete this investigation is approximately four months. Thus, the total amount of time devoted to site related environmental investigations is 18 months. The 1.5-year sampling program was designed and agreed upon in April and June of 1977 by the participating review agencies, including U. S. Fish and Wildlife, USEPA, and representatives of both Ohio and Pennsylvania.

In response to the above comment on the experience level of the sampling team, it is the opinion of the applicant that management personnel with extensive Central Basin experience spent sufficient time in the field, especially in the early stages of the program, to insure competence in the performance of the field crews. In addition, independent experts were also used to verify or dispute any questionable species identifications, notably Dr. T. M. Cavender of the Ohio State Museum.

Comment CON-10:

Finally, much of the data dealing with aquatic life seems outdated. It appears that a previous assessment of Lake Erie was used by the A.D. Little Co., rather than one which was gathered entirely by their aquatic team.

Comment EPA-7:

The aquatic information developed for the DEIS is not a full year's worth of data and also gives every indication of being a typical year with respect to weather for study. It was this office's understanding that A.D. Little and/or their subcontractor, Aquatic Ecology Associates, would take all data collected and thoroughly evaluate and analyze and summarize the data gathered. To this date, we have not seen such report and feel that before the full evaluation of the intake and effluent structures, the characteristics and flow of the intake and effluent cannot be adequately evaluated. The data developed was extremely voluminous, and we could not begin to analyze the data collected in a satisfactory manner.

Comment FWS-38:

Adult fishes should be identified according to species, not merely genus or family. In lists or tables, it is conventional to group species by family and to order the families according to American Fisheries Society Special Publication No. 6. This has not been done in Tables 2-429, 2-430A, 2-430B, 2-440 to 2-447, all of which should be revised.

Comment FWS-39:

Gillnet results for September and October 1977 are available, according to pages 4-792 and 4-793. Why are they not included in Table 2-429?

Comment FWS-42:

According to paragraph 2.905, Turkey Creek was sampled for adult fish from April through October 1977. Tables 2-442 to 2-446 contain sampling data for April through 11 August 1977. They should be revised to include data for September and October 19-- when salmonids normally approach and enter Lake Erie tributaries.

Comment FWS-43:

The first sentence of paragraph 2.909, page 1214, and the next to last sentence in this same paragraph are somewhat contradictory. Electrofishing surveys that were performed by Fish and Wildlife Service personnel during the Spring of 1977 indicated that centrarchid populations below State Line Road were not restricted to that portion of Turkey Creek designed as Station TC1. Between the mouth of Turkey Creek and that point on the creek crossed by the B&LE railroad tracks, there are several excellent pools with snags of fallen trees that provide attractive cover. Numerous centrarchids eight to 10 inches in length were taken from these pools.

Comment TU-7:

The samples of adult fish in Turkey Creek were, according to paragraph 2.905, taken April thru October. This is not adequate because migratory salmonids use the area September and October.

Response COM-10, EDM-7, FWS-38, FWS-39, FWS-42, FWS-43, TU-7:

Adult Fish Sampling Data

Adult fish were sampled in Lake Erie, Conneaut Creek, Turkey Creek, and Raccoon Creek in 1977 from April through late November/early December as ice and weather permitted. The creeks were also sampled from ice-out through mid-April 1978. Revisions in Chapter Two under the section entitled "Adult Fish" include updated tables and text that summarize the applicant's fish collection results in its entirety (also see response COM-9,. Individuals interested in obtaining a highly detailed analysis of fisheries data including catch per unit effort, methods of capture, weight, age, sex, and year class information are referred to the technical reports prepared by Aquatic Ecology Associates which are on file with U. S. Army Engineer District Office in Buffalo. The length and complexity of these data are such that it would be impractical to include in this Final EIS. Further, this information has been forwarded to the appropriate governmental agencies and has been made available to the general public at the three project information file centers located in Erie, Pa, Conneaut, OH, and Cleveland, OH.

The historical data on the Central Basin, which was used to complement rather than replace the original data from this program, indicate that this portion of the Basin is highly productive. The assessments of impact was based on that assumption pending the confirmatory results of the sampling program.

Information concerning centrarchids in Turkey Creek has been revised in the FEIS. Staff concurs that significant centrarchid populations as well as prefered habitat occur within several areas of the watershed.

In regard to the U. S. Fish and Wildlife comment that fish species are to be grouped by family, it is acknowledged that the American Fisheries Society Special Publication No. 6 is the conventional method of species listing. However, Corps staff does not believe the revisions are necessary to enhance the quality or credibility of this report. Impact assessments would not be hindered by the method in which the applicant listed species from their sampling collections. Further, this document is intended for the general public, as well as the specialist.

Comment COM-11:

Refer to A-4

Comment COM-12:

It has been stated by officials of U.S. Steel, that the life span of the Lakefront plant would be approximately 40 to 50 years. Little mention is made of any impacts that the closing of such facility would have on the primary impact areas.

Comment CRG-42:

5.72 This section is so critical it calls into question all aspects of the study which cite benefits from the proposed project. I urge the Corps to note this section carefully. It clearly states. "All emission rates are expected to be within allowed Class II nondegradation limits and will occur throughout the projected 30 year life of the facility." It is incredible that a plant which will cause such massive disruption will provide so-called economic benefits for only 30 years. This fact alone calls for the denial of permits. At the very least, the Final EIS must address problems to be associated with the decommissioning of the plant. What will become of Conneaut then?

Comment PHCOE-21:

"When did you (USS) plan to decommission that (Conneaut) plant?"

Response COM-12, CRG-42, PHCOE-21:

The statement made by representatives of the U. S. Steel Corporation concerned the usable life of equipment that would be installed in the proposed Lakefront plant. The

applicant has advised that there is no schedule for decommissioning plants over the long term. Economically viable plants are retained in operation long after the scheduled lifetime of the original equipment through programs of maintenance, modernization, and replacement.

Comment CPA-1:

Refer to A-9

Comment CPA-2:

Refer to A-9

Comment CPA-3:

If the applicant's plan is implemented, the increase in deep water traffic to the harbor would also represent an additional threat of oil spill, increase in vessel ballast discharge, and washing of excess cargo material from the decks of ships. In fact, traffic control alone will be a problem, including that of additional small craft. We are also concerned that additional piers or structures would inhibit the present flushing action within our harbor and possibly add to the already burdensome sand buildup on the west side of the harbor. This could be especially hazardous since the lower reaches of Conneaut Creek are in a depressed state due to sewage and industrial wastes. All precaution should be taken to insure no added burden is placed on near shore, Conneaut Harbor, spawning area for fish species, including the important yellow perch.

Comment DW-8:

Oil spills are a possibility due to increased lake traffic.

Comment RW-4:

The completion of the proposed plant would signal the beginning of heavy shipping, and could increase the incidents of spillage, along with the greater possibility of major accidents. This heavy shipping would also take precedence over the recreational boating. It is important that Conneaut water supply nor its present industries be placed in jeopardy or in a position of incidental importance by the U.S. Steel facility.

Response CPA-3, DW-8: RW-4

In order to comply with Coast Guard Prevention Regulations for vessels and oil transfer facilities (33 CFR 154-156), the applicant would be required to develop Spill Prevention, Control, and Countermeasure (SPCC) plans for oil spill cleanup in conjunction with vessel operations. If refueling facilities are to be provided for these vessels, then dockside SPCC plans would also be required. Dockside plans should supplement vessel plans by including items such as local spill cleanup contractors and/or other provisions to insure a complete and coordinated cleanup. USEPA Oil Discharge Regulations (40 CFR 110-112) require on-land facilities to have SPCC plans for underground facilities exceeding 42,000 gallons or above-ground facilities over 1,320 gallons.

A total of three hundred and forty trips are estimated to be required per year to supply the proposed plant with raw materials during Step II operations . (A vessel trip is a voyage between any two consecutive ports which the vessel enters). This represents only 0.14 percent of the 249,432 lake vessel trips recorded in the Great Lakes in 1976, the most recent year for which data are available. In 1976, there were 778 reported oil spills in the Great Lakes from all causes (vessels, land vehicles, pipelines, marine facilities, and land facilities) representing a total spill volume of 714,133 gallons. Historically, the frequency of spills of oil from vessels has been found to be roughly proportional to the number of vessel trips. Assuming that 1976 is a representative year, and that the number and volume of oil spills from all causes is proportional to the number of vessel trips, the increase in spill frequency and volume due to U. S. Steel-related lake vessel traffic (superimposed on the 1976 baseline) is estimated to be 1.1 spills and 973 gallons per year. In 1976, however, only 0.36 percent of the reported spill events in the United States, and 0.05 percent of the U. S. spill volume of oil, were from dry cargo ships such as those required to carry raw materials to the proposed plant. Using these percentages, a much lower estimate is obtained of 0.004 spills and 0.49 gallons per year as an incremental increase. The actual impact will likely be a function of vessel traffic levels (baseline plus impact) unique to the routes used by the plant-related vessels, and may lie somewhere between these two estimates. In any case, the increase in plant-related lake vessel traffic does not appear to represent an appreciable increment to the overall probability of Great Lakes oil spills.

Corps personnel concur that heavier use of the harbor will increase the chance for the accidental discharge of pollutants associated with commercial shipping activities. Suggestions were provided in Chapter Five of the Draft EIS that the problem of increased boating traffic might be mitigated by the use of additional navigational aids and/or the maintenance of a separate traffic system for deep-draft vessels.

Finally in response to comments received on the Draft EIS, a new design for pier extension and the proposed dock is discussed in the Final EIS as the primary proposal. The new "open" design allows free circulation of water and would have greatly reduced impacts on flushing actions within the harbor. Although impacts to spawning habitat due to dredging may still occur, alternative pier alignments into deeper water would either provide insufficient dock space or pose a greater interference to navigation in Conneaut Harbor.

Comment CRG-1:

Refer to A-16

Comment CRG-2:

Even if proper adversary relationships had been maintained, the accuracy of this Draft EIS is open to severe questioning. A recent study by that bible of big business, The Wall Street Journal, concluded that the forecasting abilities of EIS's in general was very poor. This particular statement for example, anticipates little influx of people, largely because it assumes commuting from long distances. Nowhere does the statement mention that if gasoline costs rise significantly, long distance commuting may become a fading memory. If this should occur, and unfortunately it will, the population estimates of the study will be wildly inaccurate. And, due to the nature of the SIMPACT IV model, if population estimates are incorrect, the entire scenario depicted by the model and study are invalid.

Response CRG-2:

Population estimates contained in this EIS do not assume that any of the workers associated with the proposed facility would commute long distances, except for unionized construction workers. The assumption has been made that the operations work force would live within 35 miles of the site.

Working Paper II (Construction) (appended to the draft EIS) describes the assumptions and data sources used in estimating construction-related in-migration. Information from other studies, local union personnel, and construction management personnel was considered in establishing the 100-mile commuting radius. Relatively long commuting distances have traditionally been common in the heavy construction industry, and the 50 percent increase in the cost of gasoline in 1979 and continuing increases since then do not appear to have changed this practice.

The American consumer has historically been insensitive to changes in gasoline prices, due to the inelastic demand for gasoline (as prices rise, consumption is relatively unaffected). However, in the last few years, there has been an increased consciousness about gasoline prices that has manifested itself in a movement towards smaller and more fuel efficient cars. Increased gasoline prices do not appear to have reduced vehicle-miles traveled (VMT); i.e., while the consumer is switching towards smaller cars, he is not cutting down on the use.

Rising gasoline costs would probably not result in a substantial alteration of commuting patterns (or propensity to move) for construction workers. Since the analysis assumed that all operations workers would live in the Principal Study Area (that is, none would be long distance commuters), any interaction between gasoline prices and commuting patterns would have no direct affect on the total population during operation of the plant.

Comment CRG-3:

A critical factor that is totally ignored by the study is the cyclical nature of the steel industry. This industry, throughout its history, has been plagued with periods of expansion countered by periods of retrogression. These swings have tended to be more extensive than the natural cycles of the economy in general. The effects this would have on the study area are not even investigated.

Response CRG-3:

The applicant believes that the Lakefront plant would be one of the most efficient and cost-effective steel plants in the country, using significantly less labor and energy per ton of steel than the industry as a whole. During periods of declining national demand for steel sheet and plate (i.e., products of the Lakefront plant) it would be economically advantageous to curtail production at the least efficient plants first. As a result, it is reasonable to assume that production at the Lakefront facility would be reduced only after operations had been curtailed at other plants owned by the applicant.

Comment CRG-4:

Also ignored were the problems associated with a one-industry town. If the proposed plant is built, it will dwarf the existing manufacturing base of the local area. Incredibly, no mention of this is even made. In addition to the political power this company would wield locally, there are serious economic factors that need to be explored. For example, a long-term strike in the steel industry or in related industries, could have disastrous effects on communities so heavily dependent on this one industry. Modern day planning stresses the need for a diversified industrial base. Yet here we are being urged to give up our present diversified base to become dependent on one industry that has a history of extreme fluctuations.

Response CRG-4:

Conneaut is projected to have approximately 3,800 nonmanufacturing jobs under baseline conditions by 1990. The proposed plant would "dwarf the existing manufacturing base of the local area" by employing approximately 2,850 Conneaut residents by 1990. Thus, the proposed plant would almost double the total employment in the local area. However, one of the basic premises of the impact analysis is that plant workers (both original residents and in-migrants) would live in communities throughout the Regional Study Area.

When the proposed plant is considered as part of the regional economy, it would expand rather than destroy a diversified industrial base. Chapter Two of the EIS shows that baseline employment in the Regional Study Area is projected to be about 230,000 in 1990 and that about 84,000 of these jobs would be in manufacturing industries. Therefore, when seen in the context of the larger regional economy, the proposed project would account for some 10 percent of total manufacturing employment, contributing about the same number of jobs as the area's chemicals/rubber industry.

During the early 1960's, the steel industry entered into an experimental negotiating agreement with the United Steel Workers and since then there has been no industry strikes.

Comment CRG-5:

It is interesting to note that although proponents of the mill constantly stress the resulting increase in jobs, the study itself anticipates little if any decline in the employment rate. The number of employed persons will rise, but so will the number of unemployed persons. Our unemployment problems might very well be worse than it is today. And, if U.S. Steel should close some of their old plants once this plant is completed, total employment in the steel industry would decline, as this plant is more automated. Instead of creating more jobs, there would in fact be a net loss of jobs, and all we could be doing is transporting the unemployment problems of places like Youngstown to Ashtabula County.

Comment KE-1.

The plant's main proponent, see it as somewhat of an economic panacea for the Conneaut-Erie area. Though the DEIS does predict a decrease in unemployment, a fair amount of unemployment will still exist upon the plant's operation. Though it would certainly yield an increase in the number of jobs available, the Lakefront plant would not nullify unemployment.

Response CRG-5, KE-1.

While the projected decrease in the unemployment rate (from 5.3 percent to 4.6 percent) may not appear large, it is equivalent to a decrease of 1,100 persons on the unemployment rolls. In other words, even with an increase in the labor force caused by higher participation rates and in-migration, the number of persons unemployed would decline.

The proposed project would not replace other plants or cause layoffs in other steelmaking communities. Hot strip production at the new mill is expected to be used in part to support additional production at existing cold mills in Pittsburgh and Gary, Indiana. Since the product mix of the new facility would not duplicate products currently made by the applicant in Youngstown, the completion of the new mill would not be a signal to shut down older facilities there. The applicant has stated repeatedly that each of its plants and products will be judged independently based on individual profitability.

Comment CRG-6:

1.117 and 1.30 Both of these sections refer to the current expansion of Coal and Ore handling facilities at the Conneaut and Pittsburgh Dock Company. These sections seem to make it clear that this expansion is an integral part of the the mill project. If so, why has this work been allowed to proceed?

Response CRG-6:

The applicant states that the current expansion of the Pittsburgh and Conneaut Dock Company handling the storage facilities is in response to existing market pressures and is not related to the proposed plant. Permits for these additions to the Port of Conneaut were issued in 1976 by the Corps of Engineers with the concurrence of the U.S. Coast Guard. Impacts associated with their construction and operation are not related in this project. Sufficient space, however, is available onsite to develop the raw material storage area required by the proposed plant.

Comment CRG-7:

Refer to A-4

Comment CRG-8.

1.223 The discharge pipe as specified is larger than what would be required by the plant as described, and, at a public hearing on 16 May 1977, Mr. Malin of U. S. Steel stated that the Conneaut plant would ultimately be the largest steel plant in the world. Clearly, U.S. Steel plans much expansion of this plant. Yet, the implications of this are not explored in the EIS. Perhaps this company is using the old but often effective technique of getting "the foot in the door." The market forecast for steel is not favorable to expansion of this magnitude. Obviously, U.S. Steel is contemplating closing down some of its older mills. The implications of this need to be closely examined, not ignored. These implications are national in scope, and thus make a farce of the arbitrarily determined study area.

Comment CRG-9:

5.126 All of the sections dealing with the discharge pipe fail to address themselves to the question of why such a large discharge pipe is being used. Obviously, future expansion is already anticipated. Such expansion must be addressed in the study, or such a discharge pipe should not be allowed.

Comment DK-5:

If only 75% of the quantity taken in is to be discharged, why is the discharge pipe over 50% larger in area than the intake pipe?

Above figures indicate the discharge line should be smaller.

Draft does not adequately explain "why" or for what reason discharge line should be larger. This indicates - that the quantity - to be discharged is much larger than stated - or that future quantities will be much larger.

Clarification of this area is needed for comment. The draft does not adequately explain this area.

Response CRG-8, CRG-50, DK-5

The disparity between the size of the intake and discharge pipes is a result of several factors. Essentially, the larger discharge pipe is required to accommodate storm water runoff from roofed areas. In the event of a 100-year storm, the total discharge volume would closely approximate the intake volume (within seven percent). Also the discharge pipe is 20 percent longer than the intake pipe and the discharge flow would not be pumped. The absence of artificially induced pressure would result in a relatively low hydraulic head. Thus, to maintain adequate flow rates under all conditions and to reduce the effects of friction, a larger diameter discharge pipe would be required.

There are presently no plans for future expansion beyond what is described in this EIS.

Comment CRG-9

1.377 As noted earlier (see comment CRG-5 under Population), the assumed one hundred-mile commuting distance may well be far too great. This throws into question all population estimates.

Response CRG-9

The 100-mile commuting distance used in the EIS is the maximum commuting distance. Most construction workers would have a shorter journey to work (i.e., Cleveland is 75 driving miles from the plant site and Youngstown is less than 65 miles).

If the costs of commuting became exorbitant due to higher gasoline prices, etc., the information discussed in detail in Working Paper II (which was appended in the draft EIS) indicates that these commuters would probably choose to be weeklies rather than moving into the study area with their families.

Comment CRG-10:

2.22 This section notes that "the durable goods orientation of the Regional Study Area's economy makes it significantly sensitive to national recessionary periods. It is difficult to see how a basic steel plant would improve that situation. Table 2-1, as with many other tables, suffers from outdated data. It is incredible that a study of this size, cost, and importance would rely on three-year old data.

Response CRG-10

The economic base (durable goods) is sensitive to national recessionary periods. Even though the steel industry is known to be directly affected by the national economy, the applicant believes that the proposed plant would strengthen the overall economic base of the area. The Lakefront facility would be the most efficient of all the plants operated by the applicant producing a significantly larger quantity of steel at a lower cost per ton. If a recession should effect the steel industry, then production would be curtailed at less efficient units first rather than the proposed plant.

A study of this size, cost, and importance requires a considerable amount of time to prepare and, thus, an early agreement on a consistent basis for analysis was decided by members of the Technical Team (refer to Chapter One). When the baseline sections of the DEIS were prepared (early in 1977), 1975 was selected as the base year for statistical information since consistent and comparable data on most socioeconomic descriptors would be available for this year (although for several detailed population and social characteristics, the latest complete source was the 1970 Census). In most cases, adding 1976 and 1977 statistics to these tables would not alter the conclusions of the impact analysis. However, when recent changes or trends in baseline conditions may be significant, they have been addressed in appropriate sections in Chapter Four of the draft EIS, or in responses to other comments. In summary, it is not believed that the time and expense required to add an additional year or two of statistics to baseline tables would result in any significant changes in conclusions or benefit to the reviewing agencies and the public. Additional and detailed technical reports are on file with the Corps of Engineers.

Comment CRG-11

3.1-3.14 This important chapter on the relationship between the proposed plant and land-use plans is extremely general, speculative, and unsupported by documentation. (I might note here that these are three problems found throughout the study.) In fact, this action may well be in direct violation of proper land-use planning. I quote from Great Lakes Basin Region Summary Report for the 1975 National Assessment of Water and Related Land Resources, prepared by the Great Lakes Basin Commission, April 1977. (The Department of the Army is a member of this commission.) On page 107, the report states "The Erie-Chautauqua complex where unique vineyards along Lake Erie and the Presque Isle recreation area are worthy of special protection from encroachment by housing, business, and intensive uses." (Emphasis added.) In fact, the "Erie-Chautauqua complex" extends far to the west of Erie, reaching the fringe areas of Cleveland. This entire irreplacable area would be destroyed by the proposed plant and its primary and secondary effects.

Response CRG-11.

The Corps staff recognizes the importance of the Erie-Chatauqua complex as well as the need to minimize its development for purposes other than agriculture. As indicated elsewhere in this statement, baseline and secondary growth would be tied to those where there is an existing service infrastructure or one that can be readily expanded. Since the rural areas within the complex lack such facilities for the most part, it is expected that the degree of encroachment would be minimal. However, if there is a demonstrated need to insulate the complex from any kind of development, then strict land use planning controls and ordinances must be adopted and enforced at the local governmental level.

Comment CRG-12:

Before reviewing Chapter Four, the nature of the SIMPACT IV model should be noted. It is basically an accounting model, which takes a number of inputs, multiplies these inputs by a predetermined set of factors, and then provides the results as outputs. Thus, not only does the model give only general and superficial results, more importantly, these results are a function of the inputs and the multiplying factors. Both inputs and multiplying factors were predetermined by the applicant's consultant, and both are open to severe questioning.

Response CRG-12:

With regard to the model used in the analysis, it is true that its principal purpose was as an accounting tool. However, the results cannot be considered "open to severe questioning." The 22 working papers which describe the methodology and information sources used to derive inputs and factors were reviewed by Federal, State, and local agency representatives with expertise in specific subject areas and by an independent consultant hired by the Corps of Engineers.

Comment CRG-13:

Refer to ADN-3

Comment CRG-14:

4.21 It is well known throughout the planning field, that employment multipliers are unstable, and thus their validity is less than complete, and growth estimates are subject to very large margins of error.

Response CRG-14.

The employment multiplier referenced in the above comment was calculated from the estimated employment impacts and was not used to make projections.

Comment CRG-15:

4.34 The comparison between this proposed facility and Lordstown is without significant documentation, justification, and as noted by others, because of the vast differences between the two areas, is absurd.

Comment EPA-10:

At the July 11, 1978 hearing in Conneaut, Ohio, an A.D. Little representative cited the Lordstown industrial complex as an example of a new large facility (10,000 employees) that did not create extensive secondary development adjacent to the facility and did not attract a significant number of new residents to the area. The analogy drawn is not appropriate as the GMC facility was constructed in a large urban area (Mahoning-Trumbull Counties) with an established infrastructure of roads, schools, service industries, and more important, declining industrial employment as a result of a steady decline in the steel industry. The Conneaut area has few, if any, of these factors in its favor.

Response CRG-15, EPA-10:

Comparisons between the proposed project and the GM facility at Lordstown have been made in a limited sense, in part because the impacts of any project are as much a function of the specific site selected as of the project's employment and production characteristics.

The Regional Study area and the Youngstown-Warren SMSA (Mahoning and Trumbull Counties) are not totally dissimilar. Regional Study Area population in 1975 was approximately 460,000 compared to a population of 550,000 in the Youngstown-Warren SMSA. Nonagricultural employment was also similar, approximately 180,000 in the Regional Study Area and 200,000 in Youngstown-Warren. Employment distribution was similar, although the Youngstown-Warren SMSA has a somewhat larger share of manufacturing employment while the Regional Study Area has more service and transportation employment. Furthermore, according to comments submitted by the Pennsylvania Department of Commerce, the Erie labor market area has been experiencing a decline in manufacturing employment, with significant declines in the primary metals industry. Therefore, while the GM facility and the proposed project are not completely analogous, limited comparisons are reasonable.

Comment CRG-16.

4.42 Table 4-13 is most interesting. The baseline unemployment rate for 1979 (7.5 percent) appears high, barring a major recession. One does note however, that even this study predicts little decline in the unemployment rate as a result of the proposed project. Obviously, even the applicant admits (but does not publicize), that this proposed plant is not the panacea for unemployment it has been touted to be. One also notes that these figures are for the Regional Study Area, which includes heavily industrialized area (Erie and Youngstown) which have unemployment problems far surpassing those of the Local Study Area. Obviously, this project would provide little help for local areas, it would merely transfer the problem from the locales where it now exists to the Local Study Area.

Response CRG-16:

The unemployment rate of the Regional Study Area is not expected to decline substantially because the labor force is projected to increase as job opportunities increase. However, not all of the labor force increase would be due to in-migrants, since a large portion would result from a higher participation rate of local residents (i.e., individuals currently out of the work force that do not believe they can retain employment). When an industry moves into an area, these people are given an incentive to seek employment. The applicant believes that the proposed project would draw approximately 6,500 individuals into the labor force. As indicated in Chapter Four of the EIS, the applicant estimates that the unemployment rate could fall to 2.1 percent by 1990 without an increase in the rate of local participation.

In any case, the applicant believes that the combined effect of higher participation rates and a slightly lower unemployment rate would mean approximately 7,600 more jobs held by Regional Study Area original residents than under the baseline case.

Comment CRG-17:

4.64. This section notes that area schools will face an influx of students. Excepting the area of vocational students, what is not addressed is whether these students will have different educational needs as compared to the students now in area schools. For example, children of transient parents often have special needs which the schools must meet. This potential problem is ignored.

Response CRG-17:

There is no data to support the assumption that new school children would include a higher than average share of special education pupils. These children would not be members of "transient" families whose frequent moves cause them to fall behind in school and who have problems adjusting to new situations. The workers who move to the study area and bring their children with them would be those who expect to be establishing a permanent home. A reasonable assumption would be that the occurrence of special needs among these new pupils would be similar to national average levels.

The latest published national statistics indicate that about seven percent of the pupils enrolled in public elementary and secondary schools require some special education services. About 40 percent of these pupils had speech impairments, 25 percent were mentally retarded, and 15 percent were classified as gifted. The remainder included pupils with sight and hearing problems, physical handicaps, and emotional or social adjustment problems. If this seven percent of total public school enrollments average is applied to the expected plant-related increase in pupils, it would imply an increase of special needs pupils in the Conneaut Area City School District of less than 100, and an increase of less than 250 for all the Principal Study Area school districts.

While this national average approach indicates that the impact on special education requirements would probably not be large, any projection of the level and types of special education required would be a speculation exercise until specific pupils begin to move into the area. It is also likely that the availability of special education would influence the number of these pupils enrolled in area schools. That is, parents of children with special education needs will most likely look over the public school system when they are offered jobs at the plant. If they believe that existing public school programs are not adequate to serve their children, they might seek private schools or prefer not to accept a job that would require relocation to the study area.

Comment CRG-18.

4.44 The section on impact on law enforcement is a typical example of why this study has so many shortfalls. To assess the projected police requirement, essentially all that was done was to extrapolate the current level of police protection to the projected level of population growth. Thus, according to the study, if "p" number of police now serve "x" amount of population, then "p" number of police should serve "x" amount of population. In other words, the ratio of police to population remains the roughly constant. Obviously, what is ignored is the fact that there are not only likely to be quantitative increases in crime, but a number of qualitative changes in the type of criminal activities with which law enforcement agencies must deal.

The local areas today are not only low crime areas, but those crimes which occur tend to be of the less serious variety. The study ignores the potential problems of dramatic increases in serious crimes, and the extra police and extra training of officers this would require. Almost all boom areas have experienced mammoth increases in such crimes as prostitution, gambling, rape, drug trafficing, murder, armed robbery, and burglary. The obvious attraction this influx of money would have for organized crime is not dealt with. These types of crime are not often experienced today by our local police. Thus, the section on law enforcement is without any validity whatsoever.

Comment NPR-36:

Five (5) officers are required to provide twenty-four (24) hour service seven (7) days a week. Where some specialization will be required for criminal investigation, juvenile work, and administration, two (2) additional officers will be required. Therefore, seven full-time officers may be required by 1990.

Response CRG-18, NPR-36:

Data presented in Working Paper VII, which was appended to the draft Environmental Impact Statement, illustrates the relationship between policy personnel requirements and community size. Since most of the study area communities currently provide police service at levels below these requirements, there would be little justification for use of the current level of police protection as a projection standard. Therefore, it was assumed that for the future, the ratio of police personnel to population would need to be higher and that this ratio would rise as community population increased.

Comment CRG-19:

Refer to CON-5

Comment CRG-20:

4.357 The section on traffic and highway impacts has two main flaws. First, the loss of tax revenues as new highways are built is not studied. Second, the increased costs of maintenance is not estimated. Road maintenance is extremely costly in this area due to harsh winters, and with the addition of huge amounts of new traffic, will escalate severely. This also makes the tax reduction scenario even harder to justify.

Comment PDOT-11:

Paragraph 4.357 of the DEIS indicates that additional traffic flows will increase highway maintenance budgets but fails to quantify the anticipated budget increases. We realize that it is very difficult to accurately predict the maintenance budget increases for each municipality and it may not be within the scope of the DEIS to do so. However, we do feel that it is within the scope of the FEIS to identify the roadway mileage in each municipality that will require increased maintenance and the type of maintenance required. It should be noted that any increase in new roadway mileage or local population will automatically bring increased State funding to the local municipalities for road improvements at the rate of $691.00 per mile and $3.77 per capita. (Sept. 1, 1978 figures) Also, we feel that roads that will require immediate attention for Phase I construction of the mill should be identified as soon as possible.

Response CRG-20, PDOT-11:

Estimates of incremental costs for maintenance and construction of local streets for Coastal Communities in the Regional Study area through 1990 were discussed on pages 4-251 through 4-261 of the draft EIS. These are requirements over the projected baseline expenditures resulting from plant-related development, and are based on State and local tax information, Working Paper XXII: Local Street Requirements (which was appended to the draft EIS), and the SIMPACT IV Model.

The projected incremental annual expenditures for maintenance and construction of local streets resulting from plant-related developments by municipalities vary from 0.1 percent to 0.6 percent of the total baseline expenditure. In view of the modest nature of these incremental local street expenditures, it appears impractical to provide further detail on roadway mileage and type of maintenance for each municipality. Similarly, examining the incremental local street expenditures for 1979 and 1981 indicates that roads requiring immediate attention for Phase I construction could be adequately improved within the normal scope of municipal maintenance and construction activities. Expenditures needed are projected to be small enough to be financed from current revenues rather than from issuance of debt.

Comment CRG-21:

4.362 The section on electricity ignores the problems associated with failure to use recycled materials. Such materials consume far less electricity than what is required to make the same amount of steel from raw materials.

Comment DW-43:

(d) In a time when resources are becoming scarce, very little mention is made of recyclable steel. Recycled steel does not require coke ovens, which are a major source of air pollution from the steel mills. The Japanese are able to buy California scrap, ship it to Japan, make steel, ship it back to the U.S. and sell it cheaper than American steel companies can. Several small electric furnace facilities built by U.S. Steel might be more economically feasible. Instead, "the steel industry is rapidly eating up our mineral resources. At the same time it's building mountains of mine tailings and contributes to solid wastes accumulations, from abandoned cars to marshes smothered in landfill." (Environmental Steel, p. 136.)

Comment EPA-137.

On page 6-8, an alternative which would use electric furnaces to produce molten steel is considered. This alternative would eliminate the need for coke and sinter plants, blast furnace and other miscellaneous areas. The discharge of cyanides, phenols, and ammonia into Lake Erie would be eliminated. This is a definite environmental benefit and it is believed this alternative should be re-analyzed taking into consideration the environmental assets of this approach.

Comment KEE-5:

Advocates of the plant claim that the mill would not create heavy metal pollution of the lake, since this is a problem usually associated with the use of scrap metals in the steel making process. As now planned, the steel mill would use only iron ore for production. If built, there would be room for expansion of the presently designed plant. U.S. Steel has indicated that it would probably enlarge the mill after it is

operational. There would be room to construct a scrap metal handling facility. U.S. Steel has given no assurances that it would not use scrap metal if the economic situation were favorable. Considering that recycled materials are replacing raw materials as we use up our natural resources, the possibility for heavy metal contamination becomes more likely as a long range effect of the plant.

Response CRG-21, DW-43, EPA-137, KEE-5:

The extensive utilization of waste materials recycle (about 96 percent) at the proposed Lakefront plant has been planned as a fundamental part of the overall operation. Scrap iron and steel is generated within every steel plant by the nature of the process technology and steel plants attempt to recycle all internally generated scrap and recovered iron as a low cost source of charge material. The process flow chart of the Lakefront plant is designed to utilize only the recovered iron and steel scrap which result from its own operations. There are no plans to bring in or purchase scrap from external sources.

There are several underlying premises for consideration and selection of electric arc furnace steelmaking practice for a modern plant. One is the plant has limited annual production of small to medium quantities of steel, i.e., from a few tens of thousands of tons up to about one million tons. A second requirement is that adequate supplies of low cost scrap be available within a radius of a few hundred miles of the plant.

The electric furnace practice has been limited to production of bar and rod products of carbon and specialty steels, and specialty steel plate, although there is also some production of basic carbon steel plate. As the scale of production is increased to the levels of a modern economically viable hot strip rolling mill (several million tons/year), the cost of production shifts in favor of the integrated practice of oxygen steelmaking by refining hot metal (molten pig iron) produced by blast furnace smelting of iron ore, rather than by electric arc furnace scrap melting practice.

Two key factors exist that make use of the electric furnace impractical for the planned Lakefront plant. First, the scrap consumption of this plant could be so great that its demand may cause a shortage of scrap steel which would have a deleterious impact on the iron foundries and steel plants now dependent on scrap. Secondly, the emissions from the electric power generation needed to melt the scrap could amount to 25 percent of the particulates and 200 percent of the SO_2 expected from the Lakefront plant for all of its planned operations.

There is at this time no means of predicting where or how the electricity needed would be generated. For this reason, there would be no way to establish whether an ambient air quality environmental benefit would be obtained from the alternative of using the electric furnace process for steelmaking.

Comment CRG-22:

4.414 The section on the impact on air quality standards has several shortcomings. First, the pollution from this plant in conjunction with the proposed COHO plant were not studied. Second, even if this plant is able to meet ambient air quality standards, construction/operation of this plant may preclude further industrial development because of PSD requirements. If this should occur, it would intensify the problems of an undiversified industrial base.

Response CRG-22.

Chapter Four has been revised to address the combined effect of the proposed Lakefront and Coho plants. According to the U.S. EPA, Region V Office, the proposed plant would have no impact on future growth in Erie County, Pennsylvania.

The particulate (TSP) and sulfur dioxide (SO_2) emissions will consume portions of the TSP and SO_2 prevention of significant deterioration (PSD) Class II air quality increments. Nonmethane hydrocarborn (NMHC) emissions from the proposed plant will also have an impact on existing photochemical oxidants levels which now exceed the National Ambient Air Quality Standard for photochemical oxidants. Because of this, hydrocarbon emission offsets will have to be acquired by U.S. Steel, the State of Ohio, and/or Pennsylvania. At such time as U.S. Steel applies for air quality permits, the appropriate regulatory agencies will consider in detail the effects of the proposed facility on growth (industrial, commercial, and residential), as well as other factors.

Comment CRG-23:

Refer to CCM-1

Comment CRG-24:

4.501 The applicant's failure to consider the possibility of abnormal events during construction is further evidence of the severe lack of professionalism exhibited in this study.

Comment CRG-25:

4.503 The applicant's acknowledgement of the discharge of potentially harmful chemicals into the lake is unacceptable. In view of the condition of Lake Erie and its use for fishing, water supply, and primary contact recreation, dilution is no solution to pollution. This study also lacks proper analysis of potential impacts on the water supply of the City of Conneaut in the event of abnormal events, such as a breakdown of control devices coupled with a northeast wind. This section also notes in passing that the plant will not meet EPA requirements for ammonia. At a later point (4.723) it is noted that sublethal levels of ammonia may be exceeded. This is unacceptable.

Comment CRG-27:

4.537 Notes that Ohio standards for phenols and total dissolved solids will not be met.

Comment EDH-28:

4-600 - EPA criterion is 1 ug/l for phenols to protect water supplies and to prevent fish tainting. Why does U. S. Steel propose to discharge 2 ug/l chlorophenols? We have information that phenols are more toxic in the winter. Has this been considered? Will phenols concentrate under the ice more so than in the summer? On page 4-594, the worst case of 0.1 mg/l (100 ug/l) is 100 times the above EPA criteria and may not be acceptable.

Comment CRG-28:

4.552 This section notes that a number of abnormal events may well occur, yet incredibly that applicant details no plans whatsoever for handling these potential crises.

Comment GA-2:

In order to provide other guarantees, I would suggest that U.S. Steel now be asked to commit themselves to providing not only the best available proven pollution abatement program but that they also commit themselves to providing duplicate units or several units instead of one large unit wherever possible in order to minimize the effect of failures of any one unit. Where this is not feasible, the critical replacement parts for the abatement facilities should be provided as part of the initial construction costs. Such an approach will ultimately ease the economic impact of any remedial measures required by the local plant during future breakdowns.

Comment MM-3:

Another area of concern lies with possible abnormal events during plant operation, 4-639: Failure of neutralization system, leaks or spills from chemical storage areas or modes of transport, and power failure. One of the worst abnormal events on surface water impacts would be a complete power failure at the plant.

The obvious effect would be untreated wastewater being discharged into Lake Erie. These are conceivable problems which could occur.

Response CRG-24, CRG-25, CRG-27, CRG-28, EDM-28, GA-2, MM-3:

The analyses presented in the draft EIS show that the proposed discharge would violate water quality standards under "typical" and "worst case" conditions. As indicated in these comments, potentially harmful constituents such as phenols, total dissolved solids, ammonia, and other substances, are involved in these predicted violations. In regard to phenol and total dissolved solids, the lake background already exceeds standards in many cases and additional discharges could compound the problem. One of the primary purposes of preparing an Environmental Impact Statement is to provide information on areas of concern so that the regulatory agencies and the applicant can take the appropriate corrective action prior to any construction.

In the case of these potential violations, the applicant's recent commitment to provide final equalization lagoons would be expected to substantially reduce the frequency of occurrence predicted in the draft EIS. Additionally, the USEPA has advised the Corps that an NPDES permit cannot be issued when violations of water quality standards would result. Therefore, the proposed effluent limitations and/or discharge port design must be altered to achieve existing water quality standards. The pecific means to achieve these standards would be the subject of the NPDES permit review. Thus, through the issuance of an NPDES permit, the State of Ohio and the USEPA will be taking preventative actions to insure that the aquatic environment is protected from potentially harmful concentrations of discharged chemicals.

Ice cover would limit the evaporation of phenols from the lake surface, and as a result higher concentrations may be expected than under an ice-free surface. However, the modeling studies performed did not take into account volatilization and are therefore valid for an ice covered lake. In addition, during ice-free conditions expected, concentrations would be lower than those reported in the draft EIS for any volatile components. The effects of temperature on the toxicity of phenols is discussed in Chapter Four of this final EIS. The actual effects of the thermal component of the discharge are presented in the section of Chapter Four entitled "Impacts on Aquatic Biota - Operational Phase."

Abnormal events ar se from malfunction of either process operations or environmental control systems for a r emissions or wastewater streams. The applicant has analyzed the environmental impact of abnormal events, designed equipment, selected apparatus and defined operating procedures so that the occurrence of abnormal events is avo ; as much as possible and their impacts are minimized.

In an effort to minimize abnormal events, the applicant may install several features either separately or in combination for a specific process unit or control step. Such features would include:

Sufficient inprocess stock to permit shutdown of the malfunctioning process unit during the time required for correction,

Process interlocks to prevent operation while pollution control equipment would be inoperative,

Sufficient redundancy of pollution control system components to maintain normal control levels while a defective component would be bypassed and repaired, and

Bypassing a process step during short-time malfunctions of either the process components or the pollution control equipment.

In addition, there is a limited category of malfunction whose operation could be continued at the expense of a temporary increase in emissions which would not cause the standards to be exceeded. These individual malfunctions have been specifically analyzed for their cumulative impacts and the potential risk of occurrence. The analysis shows that malfunctions should occur at frequencies so low as to be almost negligible,

moreover, the various processes would seldom break down simultaneously. The risk analysis was based on individual processes' average operating service times between breakdowns, so that their prospective impacts over time would also be very small, and would be within levels set by air quality standards. In addition to the corresponding and corrective measures outlined above, the wastewater treatment systems would have a final retention pond which would allow mixing of effluent from several processes over extended periods of time so that an adverse impact from any individual abnormal event would be substantially mitigated.

In the event of a power outage from the utility powergrid, the in-plant powerhouse would continue to operate and provide about 25 percent of the plant's electric requirements. Thus, even though major operating units might be shut down for lack of power, critical electric-powered production and environmental control equipment could be maintained in operation. To reduce the environmental impacts of a power outage, the following production management steps would be taken: (1) substantial portions of the units producing emissions and/or effluent would either be shut down or put on stand-by status; (2) the environmental control systems would prevent discharge of any untreated exhaust or effluent from a stopped treatment system.

The U.S. EPA has informed the Corps that based on their experience at other plants where U.S. Steel Corporation has installed treatment facilities to meet effluent limitations, the time out of compliance for these facilities usually lasts no more than two days. These instances of noncompliance are associated with minor malfunctions or negligent operation.

Most of the control technology utilized at the proposed Lakefront plant would involve the use of mechanical or chemical treatment facilities. Due to the nature of these systems, immediate corrective action can be expected and demanded. In one case, the treatment facility utilizes a biological system. In such a plant, the most severe malfunction is the killing of the bacteria. If this were to occur, it might require as long as a month for the bacteria to return to stable levels. However, such occurrences are considered to be rare since the applicant has operated two such plants for more than four years and has not experienced a bacteria kill.

In regard to abnormal events during the construction phase, it is the intent of the EIS to alert the appropriate State and Federal regulatory agencies of the need to require explicit contingency plans and preventative measures to insure that serious impacts do not occur during construction.

Comment CRG-26:

4.505 The estimation that worst case conditions would occur only once per year is without documentation/justification and is thus without validity.

Response CRG-26:

The worst case values for guideline parameters were based upon the EPA's effluent limitations. For nonguideline parameters, the worst case concentrations were selected after review of six months of data collected during a two-year period of operation at another steel plant. These data, considered typical by the applicant, included monthly average and maximum values for each pollutant in terms of pounds per day discharged. The ratios of maximum to average values indicated by these data were then used as a general guide to estimate worst case values for the proposed plant. The above estimate was reached after a careful review of existing data. However, the validity of any estimate could only be verified after the plant would actually be in operation.

The applicant believes that the projected "worst case" would actually occur less than once per six month period and probably less than once in five years. For the purposes of the impact analysis, the assumption was made that a "worst case" situation would occur once annually. The uncertainty of the worst case estimate was clearly stated in the EIS.

Comment CRG-29:

4.505 This section states that "Roof runoff will be discharged untreated through the main outfall to Lake Erie." Since this runoff may well accumulate high levels of pollutants, this method is unacceptable, and another example of this company's environmental disregard.

Comment EDH-8:

The DEIS indicates that roof and other surface runoff will be put into the outfall structure untreated. Runoff can be significantly contaminated from fallout, exhausts, and other sources. No attempt was made in the DEIS to quantify pollutional loadings from these runoff sources, and further, these runoff sources were not apparently included into the proposed effluent concentrations. We feel that contamination from the roof drains and other sources could possible be significant and should not be given the somewhat cavalier treatment it was given in the DEIS.

Comment EPA-56:

Conneaut Harbor and Conneaut Creek are very important areas biologically. It is believed that the entire plan presented by U.S. Steel could be vastly improved by diverting all treated construction runoff, and operating discharges and runoff from Conneaut Creek to Lake Erie.

Comment EPA-124:

Roofed Area Runoff

No treatment is proposed for the runoff from the roofed areas even though pollutents in significant amounts (TSS up to 600 mg/l) are present. The adverse effect of this discharge is expected to be mitigated by combining it with the total plant wastewater

discharge. All this will accomplish, however, is a dilution of a problem waste stream by a large volume of water.

We recommend that treatment be provided for roof area runoff, with primary settling for solids at the very minimum. If the other chemical compounds present (sulfur, phenols, cyanide, and ammonia) are found to exist at high levels then treatment should also be provided for these pollutants.

Comment PDEP-6:

The storm water management system is unclearly identified in the Draft EIS. Our experience with some other steel mills indicates that the roofs and surrounding areas are filthy as a result of the steel making activities. In certain areas, significant amounts of cyanide and phenolics are appearing in area waters during runoff. This has been attributed to general runoff from the area. It is not clear if this condition is due to loss of materials that were deposited a long time ago, or if it is a result of current practice. Given the ephemeral nature of cyanide and the fact that cyanide is currently being found, losses are probably a result of current practice.

The concern about storm water will be met if the following is done:

a. All storm water, including roof drainage, is discharged through the Lake outfall.

b. All of the discharges through the Lake outfall are monitored for cyanide.

c. The effluent method of handling storm water is to use it as part of the manufacturing process. The Company takes in 93 million gallons of water per day from the Lake. The area that will be disrupted and from which runoff control is desirable is 1,290 acres. The daily requirements of the plant, spread over these 1,290 acres, would be equivalent to 2.7 inches of runoff. Assuming that the area is completely impervious, a storm event of this magnitude in Erie has a reoccurrence interval of between 2 and 5 years. The Company has already indicated that it intends to construct sediment control facilities to handle one day storage of runoff. The discharge from this storage could be connected to the water intake lines. This procedure could result in zero discharge of storm water. Additional benefits may be derived from this procedure since the company has identified total dissolved solids in the lake water supply as a deterrent toward achieving high levels of recirculation in the cooling tower and process water systems. The runoff is likely to have lower concentration of dissolved solids than the Lake (although the suspended solids would be higher) and dilution of the Lake water with the storm runoff should improve the quality of the industry water supply to the point where the monetary benefits derived from such a system may exceed the cost of making the connection.

Comment PFC-24:

Page 4-693 (4.585). Since roof runoff could be significantly polluted, it should not be allowed to be discharged untreated to Lake Erie. Some type of collection and treatment system for roof runoff should be required.

Response CRG-29, EDM-8, EPA-56, EPA-124, PFC-24, PDER-6:

Roof runoff will contain contaminants from atmospheric fallout, exhausts, and other sources. The actual roof runoff water quality at any iron or steel plant is highly variable, being effected both by the time since the last rainfall (i.e., how long the contaminants have had to accumulate) and the rainfall intensity. In addition, many contaminants are washed away during the early rainfall periods of a storm. This "first flush" effect causes an initial load of highly concentrated parameters to reach the receiving water.

Consequently, given the state-of-the-art, it is infeasible to accurately characterize in advance the quality of stormwater roof runoff from the proposed Lakefront plant site during normal operations. The available data on the quality of runoff from iron and steel facilities are extremely limited and are rarely consistent either across drainage basins within a specified industrial area or from a particular area of one plant to a similar area of another. Currently, The Research Corporation of New England is undertaking a study of steel plant stormwater runoff for the Industrial Environmental Research Laboratory of the EPA.

The proposed Lakefront plant would differ from existing steel facilities in the country, and thus, runoff data from other steel facilities may be of limited applicability. The applicant concludes that the stormwater roof runoff from the proposed plant during operations could be of higher quality than the runoff from most currently operating iron and steel facilities. This conclusion is based on the expectation that fugitive emissions from the proposed plant will be relatively low, thus minimizing contaminant loadings to the roof surface and runoff.

The roof runoff would be mixed with plant process water from the final polishing lagoon and discharged through the proposed plant's main discharge outfall. All other surface runoff will be discharged at other locations after passing through settling ponds. Chapter Four of the DEIS presents values based on existing data for the estimated typical average quality of runoff, without treatment, during storm events.

The Pennsylvania Department of Environmental Resources requested that the applicant monitor the main outfall discharge for cyanide. A discharge monitoring system would be implemented as required to meet the conditions for the NPDES permit. Monitoring requirements would be determined at the time of such permitting. The applicant has stated that if the analysis of the outfall wastewater effluent indicates excessive suspended solids, the facilities necessary to remove suspended solids from the roof runoff would be installed. In addition, treatment would be provided to reduce concentrations of any other parameters identified in the combined main discharge flow attributable to the roof runoff (including but not limited to sulfur, phenols, cyanide, and ammonia) to levels acceptable to the USEPA.

The locations of construction surface runoff discharges have not been determined. The applicant indicates that the major portion of construction runoff would be discharged to Lake Erie, but would not be determined until such time as the erosion control plan is finalized. As a part of the plan, all runoff from the construction area would be collected and diverted to sedimentation basins for the removal of sediment. The small portion of construction runoff discharged, after settling, towards Conneaut Creek would not be expected to significantly affect the maintenance and operation of Conneaut Harbor for navigation, or its value as an aquatic habitat.

All plant process discharges during operation would be routed through the main outfall. Treatment would be provided to the degree necessary to meet NPDES permit requirements and USEPA approval.

As a result of the revised proposal not to divert Turkey Creek to Conneaut Creek, some of the stormwater surface runoff discharge patterns discussed in the draft EIS would change. According to the revised proposal for Turkey Creek, the applicant anticipates that most of the stormwater runoff from the developed portions of the site would be diverted to Lake Erie rather than Conneaut Creek. Among the options considered would be discharge through the main outfall, although possible overflows during peak storms may rule out this option. Undeveloped areas in the Turkey Creek drainage would flow undisturbed to the creek.

Prior to discharge, surface runoff from developed areas would pass through sedimentation basins. Flows from any source not meeting the proposed EPA New Source Performance Standards for suspended solids and pH in miscellaneous runoff from iron and steel facilities (29 March 1976) would be treated to meet those requirements. Monitoring and treatment of runoff discharges for other parameters would also be provided as necessary to meet any as yet unspecified regulatory requirements.

The Pennsylvania Department of Environmental Resources suggested that, as an alternative, stormwater runoff could be used to meet part of the plant water requirement. Based on an average precipitation rate of 35 inches per year, approximately 3 million gallons per day of runoff would be collected from the 1,162 acres of developed plant area. This is only three percent of the plant's daily requirements. Moreover, flow from the runoff holding ponds would be quite erratic and thus, undependable. During dry seasons, the ponds may even dry out completely. The proposed Lakefront plant requires intake water at a uniform rate 24 hours a day; frequent adjustments to match the maintainable pumping rate to the erratic runoff flow rate would not be sound engineering practice. Using the stormwater for plant process water would not affect the already high overall recirculation rate of 13.1 planned by the applicant. However, to the extent practicable, the applicant will consider the possibility of utilizing some portion of this runoff in the proposed Lakefront plant.

Comment CRG-30:

Refer to BA-1

Comment CRG-31:

4.641 This section notes that sulfate concentrations may exceed levels hazardous to health. The study fails to consider the financial and social costs this would place on the local communities.

Comment EPA-112:

5.102 - It should be noted that the sulfate increment added by the plant plus the existing high ambient levels will cause both the worst case and the annual mean concentrations to correspond to levels reportedly associated with adverse health effects.

Response CRG-31, EPA-112:

The draft EIS stated that the very small projected increment in sulfate concentrations, added to the high existing background levels, might approach and possibly exceed levels reported by some research to represent possible thresholds for human health effects. However, it has been noted that "the whole area of SO_2, particulate sulfates, and particulates, and the individual and collective health effects is broadly recognized by most leading authorities ... as presenting enormous difficulties in the attempt to distinguish the effect of specific pollutants (Pollutants and High-Risk Groups, E. Calabrese. Wiley-Interscience, NY. 1978). Moreover, while work has been done in the area of quantifying the costs, financial and otherwise, of air pollution (see, for example, Air Pollution and Human Health, L. Lave, et. al., John Hopkins, 1977), the scope of the draft EIS emphasized consideration of potential health effects. It is acknowledged that populations potentially exposed include those predisposed to the effects of respiratory tract irritants. The estimation of cost could only follow from a more extensive and specific epidemiological study of the existence and characteristics of any potential link between air pollution and respiratory disease among the area's population.

Comment CRG-32:

4.648 This section confesses that there are no data regarding the impact of particulate emissions on terrestrial fauna or domestic livestock. This admission of ignorance on the part of the nation, even if due to "the state of the art", should not be accepted as meeting requirements for issuance of permits. If construction/operation is allowed, and negative effects are later found, it may well be too late.

Response CRG-32:

The effects on wildlife from ingestion and inhalation of trace elements in particulate matter are presently difficult, if not impossible, to evaluate. This is due mainly to the absence of specific information and research nationwide on: (1) the concentrations of most trace elements in the diet of animals and the total amounts of food and water consumed by individual species, (2) food-chain transfers and bioaccumulation of trace elements, (3) trace element retention times, excretion rates, and assimilation rates in individual wildlife species, (4) physiological, biochemical, and synergistic effects of trace elements in the animal body, and (5) effects of lifetime exposure to very low concentrations. However, two analyses by Dvorak et. al. 1977 on large particulate point sources (coal-fired power plants) indicates that there is relatively little impact to the terrestrial ecosystems provided that new source performance standards are met and that tall stacks are used. The proposed steel plant will utilize tall stacks and will be required to meet stringent emission controls. This should ensure that there is relatively little impact on wildlife and domestic livestock from particulate matter.

Comment CRG-33.

4.682 This section notes that more dredging will be required, and that this will result in lower oxygen levels. This study fails to examine the effects of this in detail. And, who will this dredging be done by, the Army Corps of Engineers? If so, what will be the costs to the American taxpayer? And, where will the dredged material be placed?

Response CRG-33:

Section 4.682 of the draft EIS correctly states that maintenance dredging would be required periodically. At this time, an accurate estimation of the quantity of dredged material to be removed and how often this will be required is not possible. The actual dredging must be performed by the applicant, not the U. S. Army Corps of Engineers. Thus, all costs will be borne by the U. S. Steel Corporation, not the American taxpayer.

At the time dredging is deemed necessary, the U. S. Steel Corporation will be required to file a Department of the Army permit application with the Corps of Engineers. The drawings submitted in support of this application must show the dredging site as well as the location of dredged material disposal area. Upon receipt of this information, a full public interest review will be performed in accordance with Corps regulations. Should this review indicate that a favorable decision can be made, the permit would be issued with appropriate conditions to safeguard water quality. Temporary reduction in oxygen levels occassionally result during maintenance dredging activities as certain constituents in the sediment are oxidized in the water column. Increased water circulation afforded by the applicant's modified pier proposal would tend to dissipate any localized areas of oxygen depletion. Further, the possible loss of aquatic organisms related to this activity would depend on the overall reduction in dissolved O_2 levels, and the mobility of the species involved. A more detailed examination of the environmental impacts associated with future maintenance dredging activities would occur when the U. S. Steel Corporation submits the appropriate Department of the Army permit application.

Comment CRG-34:

5.1 This section again lacks substantive documentation to support the statements made. Without such documentation, such statements have no place in an EIS.

Response CRG-34:

Chapter Five of the Environmental Impact Statement contains a summary of the adverse effects associated with the proposal and a description of potential mitigation measures. The supporting documentation for this section is based on the analyses presented in the preceding chapter entitled "Environmental Impact of the Proposed Action."

Comment CRG-35:

5.8/5.9/5.10 These sections note that school tax increases will be required, seemingly in contradiction to earlier statements above tax reductions. The study fails to consider the past reluctance of the local public to approve such levies.

Comment DW-14:

Population increases will make increases in schools, teachers, hospitals, doctors, dentists, waste water treatment facilities, solid waste facilities, new road construction and road maintenance, traffic and its problems, fire and police protection, and many other secondary developments necessary. These expenditures, both public and private, will cost far more than any foreseeable tax increases generated by the proposed steel plant. Therefore, the increases for residents of all affected communities will increase. School tax increases as listed in the DEIS are: Conneaut City School tax increased at least 12 percent in 1981, property taxes in Buckeye local school district will increase eight percent in 1981, 10 percent in 1986 and 12 percent in 1990, Ashtabula City School District four percent, Girard School District by $1.80 in 1981 and $90 after 1981, Fairview School District by $1.90 (four percent) in 1981 and two percent in succeeding years (5.29-5.33, p.5-10-5-12). These taxes could be higher because of population discrepancies, as much as three times higher.

Response CRG-35, DW-14:

The increased requirements for public funded infrastructure and services related to population increases form the basis for the tax analysis. Even with significant increases in population and local government expenditure requirements, residents of the two Local Study Area communities can expect lower taxes than under baseline conditions because of the addition of the U.S. Steel facility to the tax base.

Other communities in the study area would have to rely on nonfacility revenue sources to offset any increased expenditure requirements. For most, this would require some small increase in the tax rate. These impacts and the methods and consequences of avoiding tax rate increases are described in Chapter Four of this statement. In three of these communities, Ashtabula Township, Girard, and Millcreek, the tax rate could increase in some years and decrease in others, whereas in Saybrook, a tax rate increase is projected for one year, with no change during other years. This reflects the methodology used to calculate tax rates, in that each year is treated separately. It is reasonable to assume that these communities would pursue a fiscal policy that would smooth out tax rate fluctuations, possibly using short-term borrowing to meet expenditures in the early years of the projection period in anticipation of increased revenue generating capability in the later years. Such an approach would be particularly applicable for the Conneaut Area City School District, which is expected to incur construction costs one year before a substantial increase in its tax base.

The possibility of increased tax rates for the Conneaut Area City School District is a short-term problem resulting from the need to begin constructing an addition to the senior high school one year before the U.S. Steel plant valuation is added to the tax base. A tax rate increase could be avoided by delaying construction for one year and reducing operating expenditures slightly or by borrowing short-term funds in anticipation of the following year's revenue increase. The construction requirements noted

for 1985 and 1986 could be funded without any tax rate increase, so that voters would likely be less reluctant to appr e a bond issue.

The other school districts would not have significant tax base increases to offset higher costs. Nonetheless, tax rate increase would not be substantial, with a maximum increase of 12 percent in the Buckeye Local School District. Moreover, these projected increases must be viewed as very conservative estimates because of the methodology employed in estimating school district revenues and expenditures. Expenditures are estimated using an average cost approach which assumes that each additional student would cost a school district $1,250 ($1,350 in Fairview, $1,275 in Mill Creek, based on 1975 expenditures) in additional operating expenditures. However, because of declining baseline enrollments, the marginal cost of each additional student is likely to be somewhat less. With revenues estimated on a marginal basis and expenditures on an average cost basis, the projected increase in the property tax rate is likely to be somewhat overstated.

Comment CRG-36:

Refer to CCM-1

Comment CRG-37:

5.17 The study notes that increased ship traffic will seriously impair the recreational value of the harbor. However, the study ignores air and water pollution these ships would cause. The study also fails to explore possible economic implications of reduced tourism as air and water quality deteriorates. Not only baseline but potential future tourism should be studied.

Comment DW-12:

1. The increased population will cause incredible pressure for recreational facilities. Since nearby areas will certainly be ruined by combinations of construction and operational pollution, new sites for recreation will be necessary and unfortunately quite difficult to find. New recreational areas will likely be developed farther south into both states, this means the loss of the lake and lake shore for recreation on a large scale. Some specifics:

a. loss of fishing on Turkey, Raccoon and Conneaut Creeks;

b. loss of beaches both east and west of proposed steel mill;

c. loss of hunting at Conneaut site - this will upset wildlife population in surrounding areas. The full consequences of this relocation are unpredictable, but overcrowding, increased stress, and some starvation will occur.

The losses of these recreational areas will make local recreation difficult, thus forcing residents to drive longer distances to adequate facilities.

Comment DW-18.

2. Raccoon Creek Park and the camp areas directly downwind will be lost as prime recreational areas because of both air and water pollution.

Comment FWS-5c.

The narrative regarding impacts on Recreation, paragraph 5.13, page 5-5, is not complete. It should also provide the reviewer with an analysis of the following recreational needs in northern Ohio: easy, cost-free access to the Lake Erie shoreline, industry-free river mouths, and harbor structures available for use by sport fishermen and other recreationists. The construction of this steel making complex as proposed will unduly curtail future recreational opportunity, and mitigation measures should be required.

Comment FWS-57:

The last sentence of paragraph 5.13, on page 5-6 which discusses mitigative measures is not in sufficient detail to allow the reviewer to judge the feasibility or practicality of those proposals. The FEIS should be sufficiently detailed as to how loss of fishing areas will be accomplished, how and where new fishing and hunting areas could be provided, and what specifically is meant by " . . . the alleviation of hazards to small boats".

Response CRG-37, DW-12, DW-18, FWS-56, FWS-57:

Fishing in Conneaut and Raccoon Creeks is not expected to be adversely impacted by construction and operation activities on the proposed plant site. The nearest proposed construction of transportation infrastructure would take place more than 1,000 meters west of Raccoon Creek, and since there are no tributaries to Raccoon Creek in the eastern portion of the plant site, the possibility of plant construction or operations runoff affecting the creek appears extremely remote. Some construction and operations-related air emissions might be transported over Conneaut and/or Raccoon Creeks. However, National Ambient Air Quality Standards for all parameters except ozone are projected to be met. There is no basis for projecting adverse air quality-related impacts on fishermen or other recreational users of locations near the plant site.

In December 1978, the applicant proposed to culvert part of the lower reach of the creek and assist Ohio and Pennsylvania resource agencies in managing other parts of the lower and middle reaches of the creek as salmonid nursery/recruitment habitat. Downstream of the culvert, pools and gravel beds would be installed to encourage spawning while flow augmentation could be provided to afford near optimum flow conditions for salmonid migration. This proposal is described more fully in Chapter 1 of this final EIS.

The applicant also proposed not to develop the lower 1,500 feet of Turkey Creek, and would permit boat access to the beach areas in the vicinity of the mouth of Turkey Creek and the U. S. East Breakwater Extension.

In addition, the applicant is also considering the donation of 38 hectares (94 acres) of land east of Elmwood Road to Erie County or the Pennsylvania Game Commission. About 2,000 feet of the main stem of Raccoon Creek passes through this area and would be available for fishing as a result of this action.

Boating in Conneaut Harbor may become somewhat more difficult during the construction and operations periods due to the presence of equipment and slightly increased vessel traffic to and from the Pittsburgh and Conneaut Dock Company docks. As indicated in Chapter Four of the DEIS, the plant-related shipping increment would be relatively small, and would not be expected to represent a measurable source of air or water pollution, which could have a significant impact on tourism.

Approximately 1,000 acres of the 2,770 acres that would lie within the perimeter fence would remain in a relatively natural state. If the deer herd in this area were not managed, the carrying capacity of the area may be exceeded and starvation, disease, and overbrowsing of vegetation may occur. The applicant is encouraged to continue discussions with the appropriate State agencies to work out a contingency plan in the event of such an occurrence.

Comment CRG-[illegible] Refer to Comment [illegible]

Comment CRG-39:

5.41 This section notes that often funding may not be available until the need is critical. It provides no method of overcoming this problem.

Comment STP-6:

Regardless of which demographic plan for development occurs it will lag significantly behind the required development of the facilities. Accordingly, revenues will lag and serious fiscal problems could exist in attempting to provide these facilities.

It is perfectly clear that local municipalities are being confronted with a tremendous task to effectively manage the development of their communities and provide the necessary services. While this is not an impossible situation it is one that requires time to properly address and prepare for. In an effort to accomplish this, Springfield Township and East Springfield Borough have placed on a referendum the question of merging. However the local governments or government of the municipalities or municipality will insist that certain needs, issues, and requirements be dealt with and feasible plans, both physical and fiscal, be developed in such a way that long term problems are not left for the municipality to deal with after all the permits are issued, the development initiated, and the high level state, federal, and regional agencies have gone to other project.

We do not intend to impose initial facilities costs on present residents beyond those normal in adjacent non-impacted communities to pay for the additional facility capacity needed to accept whatever development occurs.

We will expect full support and assistance from all involved organizations, public and private, in accomplishing these objectives and will not hesitate to use our municipal prerogatives where necessary to prevent unacceptable short or long term results.

Comment SST-2:

The E.I.S. has said nothing about South Shenango Township. Where are the funds going to come from to take care of services required when housing development begins?

Response CRG-39, STP-6, SST-2:

Each Federal funding program has its own criteria for eligibility and need. In some cases, need criteria will qualify a community for Federal assistance before any population impact, while in other cases, funding eligibility may follow the population growth.

The ongoing Federally-funded planning process should identify any potential problems created by a time gap between population growth and funding eligibility. The plans themselves should propose interim mitigative measures for local officials to implement and Federal and State Governments can usually find ways to help alleviate such problems. Further, the local Federally-funding planning process should identify any such potential problems at an early stage so that Federal and State agencies can prepare to provide appropriate relief.

Since substantial portions of Federal aid flow through State Governments, impacted communities must be prepared to address many of their specific questions to the appropriate Pennsylvania or Ohio State agencies. Clearly, water and sewer facilities and highways will be among the most costly secondary needs, and much of the Federal money for these purposes is administered by the States. Communities expected by the proposed U.S. Steel plant must understand that the two Governors of Ohio and Pennsylvania act as managers of many Federal programs. A summary of available programs and application procedures is available in the most recent edition of the Catalog of Federal Domestic Assistance, a copy of which may be obtained from the Federal Regional Council, Region III, 6th and Walnut Streets, Room 922, Philadelphia, PA 19106.

Comment CRG-40:

Refer to CCE-10

Comment CRG-41:

5.69 This section states that erosion "could be mitigated." Significantly, the applicant has not stated that it will be mitigated.

Comment DA-2:

An erosion control plan conforming to the requirements of the Commonwealth of Pennsylvania (Ohio has no such requirements) will be developed for the entire site prior to the commencement of construction. Will the on-site inspection by the Erie County Health Department include the Ohio portion? Ohio representation for on-site reviews and inspections could be provided.

Comment DOC-3:

Page 4-488, paragraph 1-2. Studies conducted by the applicant indicate that severe erosion can be expected to occur along the exposed slopes of creek ravines within the project area. It has been estimated that 10-20 tons of spoil per acre/year may be eroded from the more level areas within the project site. No projections have been made concerning the steeper portions of the area. Further, the applicant has not developed an erosion plan which will stabilize the soil and prevent siltation in the adjacent creeks and Lake Erie. Heavy loading of silt in aquatic systems can smother benthic organisms, degrade the habitat (substrate), elevate the Biological Oxygen Demand (B.O.D.), and decrease the light penetration through the water column, thereby limiting photosynthetic activity of phytoplankton, algae and submerged aquatic plants. A suitable erosion plan designed to prevent loading of silt into the aquatic system should be developed so that serious stresses on aquatic organisms and their habitat will be minimized.

Comment EPA-76:

Chapter 1-286 - It is stated in the section "Construction Pollution Control Plant," that although no specific plans have yet been developed to control pollution during the construction phase, the applicant is cognizant of the need and is currently developing detailed plans to achieve such control. These plans should be discussed at this time.

Comment FWS-14:

Page 1-282, paragraph 1.356 notes that top soil will be stored on the site until plant construction is completed. Measures such as hydro-seeding should be considered in order to minimize erosion of this material as a result of stormwater runoff (page 1-290, paragraph 1.367).

Comment OEPA-11:

Handling of Top Soil, Section 1.356: This section notes the top soil removed from the construction site will be stored until construction is complete. Are any affects on the top soil envisioned due to this extended exposure? What measures may be employed to protect this soil during the construction period?

Comment PDER-5:

2. The Department, however, has certain other concerns about the Draft EIS. For example, the Erosion and Sedimentation Program is unclear and needs more attention. A complete E & S Plan must be prepared and submitted for approval before construction may begin. The erosion and sedimentation control program as outlined in the Draft EIS is unclear. At one point, losses are indicated at about 6,500 tons per year without corrective measures and 2,600 tons per year with corrective measures. This should be clarified. Furthermore, the basic approach of controlling sediment alone and not controlling erosion should be re-evaluated. We would prefer to see erosion controls to prevent soil losses. In any case, sediment losses both during and after construction should be considered in relationship to the continuing maintenance and operation of Conneaut Harbor for navigation and to prevent an adverse impact on the current uses of the waters in the area. In order to protect the cold water fisheries, sediment losses from any parcel of land during the construction phase should not exceed losses from strip or row cropping where good management practices are in use. These losses should be sustained for no more than one season. After that, added controls should be installed to reduce losses to that of a well-managed pasture. Buffer strips along waterways should be installed to maintain the current cold water uses of the stream. Buffer strips will serve the dual purpose of removing sediment and provide continuous shading of the waterways to minimize elevated summer temperatures.

Response CRG-41, DA-2, DOC-3, EPA-76, FWS-14, OEPA-11, PDER-5.

In response to the comments received on the draft EIS, the applicant has rejected the original proposal to fill and divert Turkey Creek. The new plan calls for the preservation of Turkey Creek in its natural state except for the reach between State Line Road and a point 1,500 feet above Lake Erie which would be culverted. This new proposal would eliminate the diversion ditch, thus altering the construction and operation-related erosion and sedimentation impacts on water quality.

For comparative purposes, the impacts associated with both proposals are discussed in Chapter Four of this final EIS. In addition, the text of this section has been rewritten to clarify the original estimates for sediment loading to adjacent water bodies during plant construction.

The original plan without erosion control (assuming a sediment loading rate of five tons/acre/year) would result in a total loading of 6,500 tons per year during the peak construction period. Conversely, if erosion control measures were implemented, the sediment load would drop to 2,600 tons per year. By comparison, a loading rate of 2,500 tons per year would be expected if the Lakefront site were used for well-managed row cropping.

Dredged material removed from Conneaut Harbor during the period 1973-1978 varied widely, ranging from 28,000 cubic yards to a high of 575,000 cubic yards. The loading rate of 2,500 tons per year is considered to be small by comparison. Thus, no adverse impacts on harbor operations maintenance dredging requirements or the associated aquatic habitat are anticipated.

The revised proposal in combination with an on-site erosion control plan would not change the overall loading rate, although the sediment would be distributed amongst Turkey Creek, Lake Erie, and Conneaut Creek. In this case, the quantity of sediment entering Conneaut Creek would have no affect on the harbor or its aquatic biota.

However, if the erosion control measures were not implemented, the impact on water quality in that portion of Turkey Creek downstream of the culvert could be significant during those periods when construction activities would coincide with low flow conditions.

The applicant has agreed to apply the applicable erosion control regulations of the Commonwealth of Pennsylvania to the entire site. These regulations include the general requirement (Title 25, Rules and Regulations; Part I. Pennsylvania Department of Environmental Resources; Subpart C. Protection of Natural Resources; Article II. Water Resources; Chapter 102. Erosion Control) that "all earthmoving activities be conducted in such a way as to prevent accelerated erosion...(and that) all persons engaged in earthmoving activities...design, implement, and maintain erosion and sedimentation control measures which effectively prevent accelerated erosion..." The erosion control measures prepared by the earthmover to comply with the Pennsylvania law must be set forth in an erosion control plant prior to construction activities.

Since no plan has been developed at this time, specific details cannot be discussed. However, the applicant has indicated that buffer strips along waterways will be preserved or created where possible and that diversion ditches, sedimentation ponds, and other surface water control measures will be employed, as required under pertinent Pennsylvania regulations. The applicant has also indicated that the following erosion control actions will be adopted to stabilize newly disturbed areas:

- -hydro-seeding;
- -seeding with tall fescue.

Topsoil will be scraped from the construction site and stored on the site for approximately 1-1/2 to 2-1/2 years. A detailed discussion of various methods that could be used to stabilize the topsoil may be found in the Erosion and Sediment Control Guide for Erie County, published by the Erie County Conservation District (Erie, PA) in cooperation with the U.S. Soil Conservation Service (Erie, PA). However, the most applicable methods are outlined below:

Long-term Vegetative Cover on a Prepared Seedbed - Topsoil pile is graded for controlled drainage, with furrows or diversions as needed. Fertilizer and lime are applied and the seedbed smoothed and firmed. Seed is applied by broadcasting, drilling, or hydraulic application and covered with 1/4 inch of soil.

Long-term Vegetative Cover on an Unprepared Seedbed - Same as above, except the seedbed is not smoothed and firmed. Mulch is also applied.

Mulching - Topsoil pile is graded for controlled drainage with furrows or diversions as needed. Plant residues or other suitable materials are applied to the surface of the soil. Typical materials include shredded or chopped cornstalks, hay, or straw. This mulch is anchored using netting or driven pegs.

During removal and storage of the topsoil, lower soil layers would be mixed, to a certain extent, with the topmost layer. This mixing and handling could change the soil chemistry, porosity, and permeability, thereby affecting the soil reuse characteristics. During storage, the organic content of the soil in the interior of the pile might decrease; other chemical changes may also occur due to soil/water interactions. These changes are expected to be fairly minimal in terms of overall soil quality, however, it will probably be necessary to add fertilizers and lime to the soil when it is reapplied to the site and seeded.

On-site inspection by the Erie County Health Department would be limited to the Pennsylvania portion of the Lakefront site. The Ohio portion would be monitored by the applicant.

Comment CRG-42:

Refer to CON-12

Comment CRG-43:

5.73 This section notes that data is not available to predict impacts on vegetation. In other words, they "just don't know" what will happen. No work should be allowed to proceed until such time as "they do know".

Comment EDH-34:

Based on increased air pollution, even with BAT, how many more deaths or diseases, such as cancer, can be expected in the general population (e.g., lung diseases, aggravation of existing health conditions, allergies, asthma, emphysema)? See Volume 1, page XI, #26.

Comment EDH-35:

Volume 1, page XII, (#8)--No data on loss of vegetation, wildlife, man, farm income. More should be done before the permit is issued.

Comment EPA-102:

4.757 - Synergistic effects of SO_x and NO_x with ozone could cause damage to sensitive agricultural crops, nursery stock, and native vegetation. U.S. Steel should be required to initiate studies regarding these effects.

Comment EPA-103:

4-211 - Effect of SO_2 acid rainwater on Raccoon County Park. The applicant should initiate a study of the effects of acid rainwater on surrounding forest and agricultural lands.

Comment GG-5:

Research in New York State has shown that air pollutants can have the following effects on grape production:

1. A reduction in quality through reduced sugar accumulation in the fruit.

2. Vineyard planting would be restricted to those varieties which are the least susceptible to damage, but might not be the ones that produce the end product most desirable to the consumer. In fact, one grape variety, Ives, is so severely damaged by the air pollutant ozone, that it, for all practical purposes, can no longer be commercially grown in New York State.

3. The cost of production of some important varieties of grapes is increased by the use of cultural practices aimed towards reducing the effects of air pollution on grapevines. These practices have only been partially successful in alleviating the problem.

4. A yield reduction is suggested based upon the limited research to date for several important varieties grown in New York State.

Comment GG-6:

U.S. Steel Corporation has agreed only to monitor effects of the Lakefront Steel Mill on vegetation (p. xii, item 8 of Summary). The fund believes that in addition to the monitoring of air pollutant emissions from this facility that it is of the utmost importance to the grape growers and grape industry of western New York State as well as those in Pennsylvania and Ohio that there be promptly established a broad-based research program such as that outlined by Dr. Shaulis in the proceedings on LEGS.

Comment GG-7:

Such research should be planned with regard to the following conditions.

a. There must be a measure of the effect of the predicted and of the actual Lakefront Steel Mill emissions and wastes on the grape crops polluted by it. The research effort should be a minimum of three years pre-operational and three years post-operational as suggested by Dr. Donald Davis in a letter to the Corps (Sec. 5.104). In addition, in order to determine what the actual emissions will be, there needs to be additional monitoring stations established that are located to the east of the plant site and in rural areas near sensitive agricultural crops such as grapevines. This recommendation was also made by the Corps in the DEIS Section 5.104.

b. Any damage will likely be due to (1) season-long chronic exposure to low concentrations of either single or multiple pollutants or (2) air pollution episodes, or both.

c. The dose of primary and secondary pollutants which envelopes the vineyards will be determined by the emissions and their dispersal which are highly variable.

d. Grape varieties have major differences in tolerance to pollutants. For example, research conducted in Japan has shown the Concord grape variety to be more sensitive to SO_2 injury than the Fredonia variety.

e. Water, nutrients, and protectants can substantially affect the amount of pollutant injury and damage to grapevines.

f. The items believed to be of highest priority are related to chronic damage by SO_2 or ozone, or both. The problem is complex and primarily one of pollutants or pollutant mixtures of low concentration over a long exposure which may cause injury to grape leaves, but also may, independent of leaf injury, damage grapevines.

g. In addition, such an effort should include an advisory committee comprising qualified air pollution researchers and be conducted with the advice of experienced viticulturists involved in the planning, execution, and analysis of the program.

Comment GG-8:

In summary, the grape vineyards of western New York State are located some 50 to 85 miles east and downwind of the proposed Lakefront Steel Mill located at Conneaut, Ohio. These 20,000 plus acres are located principally in Chautauqua County, New York State, along the south shore of Lake Erie, because of the moderating influence of this Great Lake on the climate. They enjoy a history of the least frost damage of any major Concord producing area in the country. It is this climatic advantage, combined with the viticultural expertise of its producers, that has enabled this area to attain and maintain its position as the single most important grape-producing and grape-processing district in the United States, outside of California.

The wine and unfermented juice segments of the New York State grape industry must compete with California and Washington wineries and processors, both areas of higher light intensity and grape yields than New York State. Because vineyards on the Lake Erie basin are near the northern limit for viticulture, they are limited by their aerial environment more so than vineyards in these above-named areas. The present pollution by ozone makes the aerial environment of the grapevines along Lake Erie even more limiting, and any additional pollution of the environment from the emissions produced by the Lakefront Steel Mill will likely bring additional restrictions to those vineyards. Any diminution of vineyard field or raw product quality resulting from increased air pollutant damage from this plant would significantly increase both production and processing costs and could seriously jeopardize the competitiveness of New York grape products in the market place. There is also, in the opinion of the fund, an interdependent relationship between the grape growers of Pennsylvania and Ohio, and the grape processors and wineries. These processors and wineries depend upon the continued supply of grapes from these areas. The grape growers of Pennsylvania and Ohio depend upon the processors and wineries of New York State for a secure market for their grape crops. To the extent that air pollutant emissions from the Lakefront Steel Mill cause damage to the vineyards of Pennsylvania and Ohio, it could seriously endanger the viability of the New York State processors and wineries as well as the grape growers of Pennsylvania and Ohio.

The fund does not believe that there has been an adequate factual basis presented in the Draft Environmental Impact Statement to demonstrate that the air pollutant emissions from the proposed Lakefront Steel Mill will not adversely affect the grapevines and grape crops. As indicated in Section 5.103 of the DEIS, there is very

little research data available on agricultural crop damage due to air pollutants. In Section 5.105 of the DEIS, there is stated that, if the area vineyards are found to be adversely affected by air pollutant emissions, there are several options that can be exercised to minimize damage. The fund does not believe that there is evidence available to indicate that the options outlined in the DEIS Section 5.105 will in any way minimize damage to grapevines other than ozone-induced damage to grapevines. There is simply no scientific evidence to indicate that these measures will in any way minimize damage from the other pollutant emission from the Lakefront Steel Mill. For the owners of the vineyards located in the Lake Erie Basin and already damaged by ozone, an inescapable question not answered by the Corps in the DEIS still remains. That is: will the proposed Lakefront Steel Mill pollutant emissions, either acting singly or in combination, cause damage to grapevines or grape crops at any point in the area polluted by this facility. The environmental compatability of the Lakefront Steel Mill with grapevines and grape crops in the area polluted by it can, in the opinion of the fund, be determined and measured in a useful way - useful and necessary to the grape growers and the grape industry of the area. The fund recommends that there be promptly established a broad-based research program such as that outlined by Dr. Shaulis in the LEGS proceedings to determine what effect the air pollutant emissions from the proposed Lakefront Steel Mill will have on sensitive agricultural crops such as grapevines. This research program should not be limited to the local effects on agricultural crops but should also include studies on the long-range transport of pollutants to the more distant vineyard areas of western New York State in the Great Lakes basin east of the facility.

Comment JB-9:

The pollution will have an adverse effect on the extensive agricultural industry of the area.

Comment NPR-23:

Health

The impact on the health of current residents of the principal study area is not discussed.

Comment PDER-3:

The analysis of the impact on agriculture is very limited. The Department of Agriculture did not agree with the mitigative measures suggested in the Environment Assessment (in Identification of Critical Issues and Concerns). The same measures are suggested in the Draft EIS.

Comment SAE-6:

U.S. Steel Corporation has agreed only to monitor effects o. the Lakefront Facility on vegetation (p. xii, item 8 of Summary). Specifics of this program should be incorporated into the Draft EIS. The research program suggested by Dr. Davis (Sec. 5.104, p. 5-39) is necessary, and will provide some answers to the question of effect of the Lakefront Steel Mill on vegetation. In addition to those suggested by Dr. Davis, studies should be promptly initiated on sensitive agricultural crops to determine how specific pollutant emitted by the Steel Mill will affect these crops. Vegetation response should be examined in relation to pollutant concentration, duration, timing of exposure (such as during bloom, etc.) and interactions with other pollutants. Actual impact of simulated (estimated) Lakefront Steel Mill emissions, along with other treatment levels of pollutants, should be examined on crops grown in the area known to be sensitive to air pollutants. Additional studies should examine the relationship of crop management and cultural practices to crop damage. These field studies should be complemented with appropriate laboratory investigations of the effects of pollutants emitted from the Lakefront Facility on vegetation.

Comment SAE-7:

Research to determine the effects of the Lakefront Steel Mill on agricultural crops requires a minimum of three years pre-operational and three years post-operational as suggested by Dr. Davis in contrast to your suggestion of a minimum of one year each for pre- and post-operational studies in Section 5.104. Vegetation response to pollutants is highly variable from year to year (1) and one-year studies are simply not adequate to determine response to field growing plants to air pollutants. In addition, response of perennials such as grapevines to pollutants are often most evident in the year following the year of exposure to the pollutant (2,6).

Comment WJB-5:

It has not been shown that emissions from the proposed mill will be controlled so that they will not be harmful to present cropping systems. Until it can be shown that emissions will be compatible with cropping systems, the mill should not be allowed to be built. How can you allow an industry to move into an area of prime and unique agricultural land if the productive capability of that land will be destroyed? The problem is that industry can locate almost anywhere--you cannot find prime and unique agricultural land just anywhere; when it is destroyed, it is gone forever.

Response CRG-42, EDH-34, EDH-35, EPA-102, EPA-103, GG-5, GG-6, GG-7, GG-8, JB-9, NPR-23, PDER-3, SAE-6, SAE-7, WJB-5:

Air Quality

Although numerous studies have reported acute injury to vegetation after exposure to contaminant levels equal to or greater than damage thresholds, there are few conclusive studies of the effects of chronic exposure to lower emission concentrations. In addition, relying solely on visible leaf injury may not provide the best assessment of damage to crops. One study reported insignificant leaf injury in first-year Delaware grapes exposed to 0.13 ppm SO_2 for 56 days, yet decreased cluster formation was observed in the second year (Fugiwara, 1970). These levels are above those projected for long-term SO_2 concentrations associated with the proposed plant, even to immediately adjacent areas. However, the above study indicates that it can be difficult to determine the long-term effects of air emissions on local and regional vegetation.

The Kaiser Steel Company has supported and cooperated in several research programs (Thompson and Kats, also C.R. Thompson, E. Hensel, and G. Kats, Effects of Photochemical Air Pollutants on Zinfandel Grapes, Hortscience, Vol. 4(3), Autumn, 1969; also B. L. Richards, John T. Middleton, and W. B. Hewitt, Ozone Stipple of Grape Leaf, California Agriculture, December, 1959, also (same three authors) Air Pollution with Relation to Agronomic Crops. V. Oxidant Stipple of Grape, Agronomy Journal, Vol. 50. 559-561, 1958). These studies have contributed to the understanding of the effects of ozone on grapes. The applicant believes the studies indicated absence of observations of harmful effects due to SO_2, NO_2, or F. Kaiser has also managed a small vineyard near its plant at Fontana, California, and reports complete absence of any effects due to air pollutants other than ozone.

The possibility of synergistic interactions of ozone with SO_x or NO_x causing acute and chronic injury to sensitive crops, such as grapes, at lower concentrations than either constituent alone has been discussed in Chapters Four and Five of the draft EIS. Data reviewed by the applicant's consultant reported synergistic leaf injury effects in a laboratory fumigation of Ives grapevines with 0.2 ppm of O_3 and 1,300 ug/m^3 of SO_2. (Westinghouse 1976).

The discussion of SO_x-induced changes in rainfall pH, in the DEIS, incorrectly stated that "the worst case increment for rainfall sulfate (0.3 mg/l) could cause a pH drop of approximately 0.3" (refer to paragraph 4.659, page 4.763). This sentence has been corrected to read "...a rainfall pH drop of approximately 0.03". As reported in Chapter Two of the EIS, the soils on the site range from a pH of 4.25 to 7.70. Even on the most acid of these soils, a rainfall pH change of 0.03 would be expected to cause a minimal change in soil pH. Measurements of the background rainfall pH on the site have been reported to be in the range of 4.6-4.3 while data from other locations in the northeast indicate that the average is about 4.15. Therefore, the "worst case" sulfate increment would not be expected to lower the rainfall pH to less than 4.0.

Generalization about the effects of acid rain on vegetation is difficult, but a variety of reports suggest that a rainfall pH of 3.0 may be a threshold, below which pathological effects on plants are probable. (Evans et al., 1976, Feranbaugh, 1976, Hindawi, 1977 and Wood et al., 1975)

Possible mitigative measures for the prevention of ozone damage discussed in Chapter Five of the EIS are the results of field and laboratory studies, and were not offered as suggestions. The Pennsylvania Department of Environmental Resources questioned the advisability of using one of these measures, the application of Benomyl because of concerns over its potential environmental impacts. Benomyl is neither readily available nor licensed for use in the project area. Measures for minimizing the impact of oxidant stipple on grapes include use of an antioxidant such as DPPD or planting a more resistant variety (Thompson & Kats, "Anti-Oxidants Reduce Grape Yield Reductions from Photochemical Smog," California Agriculture, September 1970).

The USEPA, not the applicant, will determine whether or not the proposed facility will meet standards which were set up to protect the public health and welfare. If the USEPA determines during its Prevention of Significant Air Quality Deterioration review that there is a likelihood of adverse effects on vegetation, especially the commercial value of crops, they can require further evaluation prior to any construction. At the present time, the state-of-the-art on synergistic effects is still too rudimentary to accurately establish impacts.

However, if the applicant does plan to apply for a PSD permit and adequate methodologies are available to quantify and evaluate such effects, USEPA will ask the applicant to do the appropriate analysis if deemed necessary. The applicant has also indicated that it would be willing to implement a monitoring program defined and agreed upon with the appropriate regulatory agencies prior to the initiation of plant construction activities.

Any failure by the U.S. Steel Corporation to comply with permit or regulatory requirements can be followed immediately by the commencement of administrative enforcement action by the USEPA. If compliance does not result, judicial action will follow.

Water Quality

Through the issuance of the National Pollution Discharge Elimination System (NPDES) permit for the plant, the State of Ohio and the U.S. EPA will take preventative actions to insure that effluent limitations are not exceeded.

The preventative actions incorporated in the NPDES permit are as follows:

1. Effluent limitations will be established from either the Best Available Demonstrated Technology or Ohio Water Quality Standards (whichever is more stringent).

2. U.S. Steel will be required to submit Discharge Monitoring reports to both the Ohio EPA and the U.S. EPA which will contain the daily sampling results. From these data, both agencies will be able to judge the performance of the treatment facilities and determine if the final effluent limitations are achievable when the plant attains production at design capacity. Included in the reporting requirements is a condition that U.S. Steel must report an exceedance of daily maximum limitation within five days.

3. The NPDES permit will contain a Compliance Schedule leading to attainment of final effluent limitations, as well as interim effluent limitations for the various production levels as they are reached. The interim limitations can be more stringent than the final effluent limitations. Both U.S. EPA and Ohio EPA have administrative and judicial enforcement options available to address violations of interim and/or final effluent limitations. Interim limitations for attained production levels can be imposed for the four or more years needed from the start of discharge to attaining production design capacity.

Potential Effects on Human Health

Air pollution has been reported to contribute to the prevalence of symptoms and the incidence of disease among exposed populations. Most scientific investigations of the linkage between morbidity and/or mortality and indices of air pollution may be grouped into two interrelated categories. The toxicological and the epidemiological studies. Air pollution studies of the later type are generally more concerned with the effects of exposures in ambient atmospheres. Such studies to date may be generally characterized as retrospective in nature; the predictive capability of epidemiology with respect to forecasting any increased morbidity and/or mortality due to air pollution is quite limited.

It is important to note that any attempt to quantify a potential for loss of human life due to increased air pollution attributable to a planned industrial activity, prior to construction or operation, would be speculative and subject to significant margins of error. Some "state-of-the-art" work has been undertaken in related areas of study; but applications of this work outside of a basic research context have not yet been demonstrated. In any case, comprehensive estimates of morbidity due to air

pollution are not presently available, even where comprehensive air quality data have been collected.

Comment CRG-44:

5.74 This section notes possible health hazards from air pollution. More specific, detailed data is necessary.

Response CRG-44:

Chapter Five is a summary of probable environmental effects which cannot be avoided. More detailed information is presented in Chapter Four entitled, "Environmental Impact of the Proposed Action." The health effects of sulfur dioxide and sulfates may be found in Section 4.640 through 4.644. These sections discuss what is presently known about the health hazards of the subject pollutants.

Comment CRG-45:

5.83 This section notes that U.S. Steel intends to use dilution as a major means of "solving" the problems of waste water. This is unacceptable. The quality of water discharged must be at least as high as the quality of intake water. As the applicant will be using water that belongs to the public, user charges should be established.

Response CRG-45:

Section 5.83 describes the result of using a diffuser system to reduce the concentration of discharged chemicals through rapid dilution, but does not state that this is the ultimate solution to solving this nation's water pollution problems. Where economically practicable and technologically feasible, removal of toxic materials prior to discharge or total recycling of wastewaters is the ultimate goal. However, as in this case, when total removal or recycling (without any blowdown) is not feasible, the most practicable and environmentally acceptable solution is to impose limitations on the constituents of the discharge and to discharge the effluent through a state-of-the-art diffuser system. While these measures do not eliminate toxic constituents, they can result in concentrations below those levels harmful to aquatic life and the public health.

The applicant is required to obtain a discharge permit from the Ohio Environmental Protection Agency. During the review of the permit application, the plant effluent quality and operational characteristics of discharge diffuser will be evaluated to insure compliance with Federal and State water quality standards will be achieved under a variety of operating conditions. These standards were established to protect the public health and welfare.

Development of a schedule of user charges for water withdrawn from Lake Erie is unrealistic since the entire issue is without legal precedent.

Comment CRG-46:

5.89 This section, while it notes many problems, lacks specific data, and thus is without value.

Response CRG-46:

The supporting data from which this section was prepared is contained in Chapter Four of this statement.

Comment CRG-47:

5.102 - 5.105 These sections note that harm will be done to both human and plant health as a result of air pollution. Incredibly, the study advocates monitoring as the primary method of mitigation. By the time one monitors and discovers the problems, the damage has been done. Once again, the proposal is unacceptable.

Response CRG-47:

The sections cited in this comment do not note that harm will be done to both human and plant health but rather advise that monitoring would ensure the detection of presently unknown effects. As indicated in these sections, researchers throughout the nation do not always agree on the ultimate long-term effects of pollutants.

However, the intent of the National Primary Ambient Air Quality Standard is to ensure the attainment and maintenance of such criteria that, allowing for an adequate margin of safety, are requisite to protect the public health. Secondary National Ambient Air Quality Standards specify the protection of the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air.

Both the Standards of Performance for New Stationary Source (NSPS) and the (PSD) regulations afford protection for the primary National Ambient Air Quality Standards. Section 111(a)(1)(C) of the Clean Air Act of 1977 as amended specifies that for NSPS, the emission reduction achievable through the application of the best system of continuous emission reduction must take into consideration both the cost of achieving such emission reduction and any nonair quality health and environmental impact and energy requirements.

Section 160(1) states the purpose of PSD as being the protection of the public health and welfare from any actual or potential adverse effect which may be anticipated to

occur from air pollution or from exposure to pollutents in other media, notwithstanding attainment and maintenance of all National Ambient Air Quality Standards.

On receiving all necessary State and Federal permits and approvals, the U.S. Steel Lakefront plant would have met all the above standards. Meeting these standards would assure a reasonable margin of safety for the protection of health and welfare.

Comment CRG-48:

Refer to ADN-6

Comment CRG-49:

Refer to CCM-4

Comment CRG-50:

Refer to CRG-8

Comment CRG-51:

5.128 Once again, detailed data is not provided, therefore, the section is without validity.

Comment DOT-12:

Item 5, paragraph 1.299, page 1-215, should be expanded to indicate measures to reduce potential oil contamination caused by leakage or washdown. Water separators in floor drains may be necessary. Similar consideration would be appropriate with regard to all equipment or processes using oil as a fuel or lubricant.

Comment DOT-14:

Paragraph 4.492, page 4-583, should indicate that Spill Prevention Containment and Countermeasure plans will provide for precautions to reduce potential adverse effects of spills. Oil/water separators or other techniques should be provided for.

Comment DOT-15.

Consideration should be given to providing dikes high enough to accommodate more than 2.5 inches of rainfall in 24 hours (paragraph 4.563, page 4-669). This would minimize the potential for widespread oil-laden runoff during extended rain. We suggest also that diked areas be impervious to prevent contamination of ground water.

Comment EPA-123:

Oil Storage Level

Treatment by settling is forecast for the discharge from this area. Because of the potential for a large amount of oil to be present in this discharge, some type of oil treatment will have to be provided. Possible alternatives to accomplish this could be oil troughs, skimmers, or API separators. In any event, oil treatment should be required. The EIS should describe the oil spill prevention plan to be utilized at the facility.

Comment GA-3:

Another concern is that U.S. Steel now commit themselves to a program to not only prevent pollution incidents but to provide facilities to contain and clean up any unpreventable spills. As an example, it may be appropriate for U.S. Steel to stock booms, absorbancy materials, portable pumps, etc., to contain and clean up any oil spills which may reach Lake Erie or its tributaries.

Comment PFC-21:

Page 4-589 (4.501). There are so many parts to such a large complex that abnormal spills can almost be expected. There should be information on possible emergency procedures for the various possible major catastrophies.

Response CRG-51, DOT-12, DOT-14, DOT-15, EPA-123, GA-3, PFC-21:

During plant construction, no central onsite oil and fuel storage area is planned. Lubrication and fueling of equipment would be the responsibility of individual Contractors. Their options include hiring a subcontractor to make daily onsite deliveries and arranging for onsite storage. Onsite storage areas would require the approval of the various regulatory agencies and must also meet the safety requirements imposed by the U.S. Steel Corporation construction management personnel. In response to the comment, the text of this statement has been changed to indicate that spill prevention containment and countermeasure plans would be required for any onsite oil and fuel storage facilities required during the construction phase. These plans would include provisions to prevent a spill from reaching Lake Erie or its tributaries.

A Spill Prevention Containment and Counte measure plan would be required for the plant operation phase, although it would not be developed until the oil storage area design

is finalized. However, the following preliminary provisions are anticipated to prevent and control oil spills:

1. Oil would be kept onsite in nonpressurized storage tanks.

2. The oil storage area would be surrounded by a dike to contain potential spills.

3. The applicant would institute both an ongoing operator training program to avoid the occurrence of spill events and an active maintenance program for the prompt detection and control of leaks and spills.

4. Any spill within the diked area or on the site would be contained and cleaned to the extent possible in accordance with planned emergency response actions.

5. Runoff from the diked area would be collected and treated with other site runoff flows.

Residual oil not removed during cleanup of spills at the storage tanks would coat some or all of the ground surface within the diked area. Similar effects would result from oil spills in the plant operating areas. Over time, this oil would be broken down by microbial degradation, evaporate, or be absorbed into the soil. Until dissipated, some oil could be present in the stormwater runoff, possibly in high concentrations. Current treatment plans call for the stormwater runoff to be removed through drains, impounded, treated with runoff from other plant areas, with probable discharge to Lake Erie. All runoff would be treated to meet the proposed New Source Performance Standards (29 March 1976) for miscellaneous runoffs from iron and steel facilities, and any other as yet unspecified pertinent regulatory requirements.

The treated combined stormwater runoff may have high concentrations of oil and grease if the sedimentation ponds have little effect on oil carried by runoff. If required, the applicant would provide additional treatment, including the possible use of oil troughs, skimmers, or API separators.

Existing soil at the Lakefront plant site is relatively impermeable. However, if required as a condition for permitting, diked areas would be lined with an impervious material such as bentonite clay or synthetic membrane.

The U.S. Department of Transportation indicated that the applicant consider building dikes high enough to accommodate more than 2.5 inches of rainfall in 24 hours. The dikes proposed by the applicant would accommodate the largest storm predicted over a two-year period. However, the ponds would only be expected to overflow during unusually intense storms such as those expected once every 50 years. During extended rain periods longer than 24 hours, but of intensities less than 2.5 inches per day, the controlled pond outflow rate would be sufficient to provide adequate runoff holding capacity.

Comment CRG-52:

Refer to A-4

Comment CRG-53:

Refer to A-4

Comment CRG-54:

6.56 Includes no data on tax losses as a result of highway construction.

Response CRG 54:

Analysis of tax losses as a result of highway construction relates to actions which are under the purview of the U.S. Department of Transportation. A wide range of transportation access alternatives could be implemented to insure proper traffic flow in the vicinity of the proposed plant site. Since access plans have not yet been finalized, the evaluation of options would best be performed by the U.S. Department of Transportation or its counterpart State agencies. These groups have the required specialized expertise in highway planning to evaluate the information referred to above.

Comment CSC-1:

We feel it would be detrimental to our natural resources of our game animals and game birds in the area of the proposed Lakefront site.

Response CSC-1:

As mitigation for wildlife habitat loss at the proposed plant site, the applicant has designated a 456-hectare (1,127-acre) section of their property to be used as a wildlife refuge, where vegetation may be managed to enhance the habitat for selected wildlife target species, primarily woodcock. Proper management schemes would be developed through consultation with the Pennsylvania Game Commission and the Ohio Division of Wildlife. In addition, the applicant would provide opportunities and resources to conduct research in the proposed mitigation area and a 205-hectare (507-acre) area not slated for development inside the plant perimeter fence. Also, the applicant proposes to donate a 38-hectare (94-acre) forest tract to be used as a new Pennsylvania Game Land's unit or as an addition to Raccoon Creek County Park.

Comment CWP-1:

The DEIS projects total baseline population in the Pennsylvania Regional Study Area to increase from 356,000 in 1975 to 396,400 in 1990. This is based on an average annual growth rate of .7 percent. By using analyses done by the U.S. Bureau of the Census in

their Currrent Population Reports series for the period 1970-75 one could assume a stronger growth rate between the years 1970 and 1975 and calculates to .87 percent. Using this rate there would be an increase in total population from 360,000 in 1975 (Bureau of Census figure) to 406,800 in 1990. This higher figure constitutes a baseline population in the Pennsylvania Regional Study Area 10,400 higher than given in the DEIS. Modifications in the average annual growth rate to reflect the more conservative figure of 356,400 as explained on pages 2-147 and 2-150 of the DEIS are not convincingly explained in our view. It would appear that should the steel mill be built a growth climate will be created in the study area and a higher baseline growth rate would have been a safer assumption to make.

Comment EPA-9:

Page 2-137. "It should be noted that assumptions concerning net migration and fertility rates were chosen to present a conservative (low) projection and so that worst case impacts could be developed. If baseline population levels were higher than those described in this section, population impacts attributable to the plant would be less significant relative to total baseline population and to baseline population growth rates." The assumptions made by A.D. Little in determining baseline population and growth rates appear acceptable at first glance. But, actually this assumption is misleading and may be incorrect. If baseline is low, it is true that plant impacts will be of a larger magnitude when compared to the total new population. But, if the baseline is higher, then although plant related population will appear to be a smaller percentage of the total new population, this total will be a larger number. It is this larger number that must be assessed in view of area capacities.

Comment [illegible]:

The D.E.I.S. utilizes relatively conservative estimates which indicate that the population in the Region will increase by 31,000 during the decade of the 1980's, and that the number of households will increase by more than 20,000 during that decade.

This baseline projection was predicted upon a reduced rate of growth from that experienced between 1970 and 1975. The actual experience showed an increase of .87 percent per year while the projection utilizes 0.7 percent per year. Though these are seemingly small percentages, it should be pointed out that they represent a variation of 24 percent in the rate of growth and that this rate of growth is compounded annually. A projection of actual experience would add more than 10,000 additional persons to the population during the period of concern.

It is clear that the U.S. Steel Mill, unlike Lordstown, will be built in an area which is already growing. This growth climate will greatly aggravate the secondary impact from the U.S. Steel Plant.

In greatly underestimating growth resulting from the installation of the U.S. Steel facility, the D.E.I.S. bases its impact figures on the total increase in population of 15,800 with a corresponding requirement for new dwelling units of 4,350. The actual range of growth to be experienced during the impact period study will in fact be closer to 100,000 with a corresponding requirement for more than 40,000 new dwelling units.

Response CMP-1, EPA-9, [illegible]-22:

The baseline population projection in the EIS for the Pennsylvania Regional Study Area was not based on an average annual growth rate calculation but by examining forecasts prepared by the Pennsylvania Office of State Planning and Development (OSPD), the Erie Metropolitan Planning Department, and Census data adjusted for anticipated economic and employment conditions. The 0.7 percent per year growth rate was calculated from the population projections and corresponds to the 1970-75 rate (based on the 1975 figure of 356,600 rather than the rounded 360,000). Recent conversations between the applicant and the population specialists at OSPD indicate that an annual population growth rate of .7 percent is a better indicator of future baseline trends than .87 percent. Additionally, a meeting held by the Federal Regional Council, the U.S. Army Corps of Engineers, and governmental and quasi-public agencies who have submitted substantial criticisms and/or developed other detailed population projections, met in Pittsburgh on 13 September 1978 to resolve the population problems. Baseline projections were discussed and participants agreed that projections used in the EIS are satisfactory, although some agencies updated some of their own estimates. The participants found no significant adverse consequences using these figures. Minutes of the 13 September 1978 meeting are appended to this final EIS.

Comment CMP-2:

Construction workers will be occupied at the plant site from 1980 to 1987 with one year of no activity; this is a seven-year period. The DEIS states approximately 1,000 of these workers, over the course of the project, will move into the area with their families. It also assumes that all of these "movers" will vanish from the study area by 1990. We think this unlikely.

Response CMP-2:

The possibility of construction-related movers remaining in the area after construction is completed (and between Steps I and II) is discussed in Chapter Four of the EIS. The number of movers who might stay cannot be estimated, as it would depend on the availability of construction work within reasonable commuting distance. These movers are expected to be highly skilled and paid union members who would not likely accept jobs at the plant or in secondary (housing and related) construction. Under the worst case assumption that none of these construction in-migrants would leave the study area after construction is completed, the applicant projects a plant-related population impact of approximately 19,050.

The EIS assures these construction in-migrants would not be included as part of the plant-related impact because most of them would probably leave unless large, currently unplanned construction projects are undertaken. A survey of households in nine western U.S. communities being affected by large construction projects reported

> "Apparently, the presence of large construction projects and the impacts associated with them have little, if any, effect on the decisions of the original residents of these communities about whether to stay or leave. Newcomers, however, indicated little inclination to settle in the areas

in which they were living and made their plans for staying or leaving dent agent on work availability. In s is a pattern to be found among newcomers in all of the currently affected communities studied. Newcomers in these towns seem to be part of a highly mobile group of people whose changes of residence depend on their jobs." (Mountain west Research, Inc., "Construction worker Profile" Final Report, a study for the Old west Regional Commission, December 1976.)

Only 10 percent of the surveyed in-migrant construction workers indicated plans to "settle down here," compared to 76 percent of the long-time residents.

While the population section of the EIS assumes that there would be no plant-related construction in-migrants living in the study area when plant construction has been completed, the housing analysis takes a "worst case" approach. As discussed in Chapter Four, a basic assumption of the housing impact analysis is that all of the construction movers might remain, thus their hoces would not be available for other in-migrants. If all of the in-migrant construction workers were to leave, there would be an additional 1,000 housing units available for in-migrant operations workers, which would ease the anticipated supply and price problems described in the housing section.

Comment CWP-3:

We believe that the number of jobs and the population derived therefrom predicted to be generated from the 8,500 basic jobs expected in the steel complex are set too low. The DEIS predicts 4,900 new related jobs (secondary impact jobs) to be generated as a result of the basic 8,500 jobs, it totals the new jobs expected in the Regional Impact Area in 1990 at 13,400 (figure includes the 8,500, -- after all of the construction workers are "gone. Charles M. Tiebout in his work, The Community Economic Base Study, states that "the simplest assumption is that over the long run the proportion of basic (steel complex) and non basic (related) jobs will remain about the same. Hence an increase in the number of basic jobs will eventually produce a proportional increase in non basic jobs." In 1974 in the Regional Study Area, 45% of the employment was in manufacturing, agriculture, mining and construction activity and 55% was in non-manufacturing activity, service related work (Table 2-5 of the DEIS). This means that for every "basic" job there were 1.2 "non basic", service related jobs. By using only the factor of 1.0, 8,500 steel complex jobs would generate another 8,500 jobs for a total of 17,000 jobs. One could say that the term "long run" makes the difference, and projections to the year 1990 would not be considered long run in this case. However, in our view the fact remains the steel complex portends more secondary job growth than the DEIS implies.

Response CWP-3:

A meeting with the Federal Regional Council (FRC), the Army Corps of Engineers, and governmental and quasi-public agencies who have submitted substantial criticisms and/or developed other detailed population projections, was held in Pittsburgh, PA, on 13 September 1978 to resolve the indirect and induced employment figures used in the draft EIS. The participants generally indicated that the projections used in the EIS represented the best possible case (lowest possible number of induced jobs created and that the existence of an alternative must be recognized. This alternative, explained in detail in the minutes of the meeting, projects an induced employment of 9,528. However, due to the highly speculative nature of this type of projection, the applicant's forecast is left intact in the EIS for illustrative purposes. Staff is aware that other projections exist and encourage the reader to review them (refer to Chapter Four). Minutes of the FRC meeting, as well as the applicant's response, are appended to this statement.

Comment CWP-4:

Refer to ADA-3

Comment CWP-5:

The DEIS pr[illegible]t the vast majority of the settlement impact resulting from the steel comp[illegible]r in what are called the coastal communities, the first tier of municipal[illegible] of Lake Erie from Millcreek Township in the northeast to Seybrook Township in the [illegible]uthwest. Approximately 90 percent of the settlement impacts are predicted in th[illegible] area. This assumption conveniently enabled the DEIS to concentrate its detailed and voluminous analyses in a very limited area, accordingly making the task easier. The consequence of this was that many communities in the Regional Study Area, many of them rather close to the steel complex site, were not analyzed. We find the coastal communities settlement concept an interesting one, but we think it is an over-simplification of the issue. We do not believe as much as 90 percent of the population impacts will occur in this area. This scenario ignores the following facts:

1. Most of the coastal communities' area does not have public sewage service. Vast expenditures and considerable time will be needed to sewer much of this land. For sound development public sewage service is a "must" in this area because of soil conditions. Federal monies for sewage system construction are chiefly keyed to existing settlements with water quality problems.

2. Public water service is lacking in much of this area particularly in Erie County.

3. It is in the coastal communities that the largest concentration of good agricultural soils exist. Agricultural uses, including fruit and vegetable production, are successful in this area particularly along the lake front.

4. This area is transected by railroad line which will create serious circulation problems in the event of high density settlements.

5. Land use regulations and attitudes towards urbanization currently in many of these communities are not supportive of the settlements proposed in the DEIS.

6. Land values in the coastal communities are higher normally than in areas south of the steel complex site. The cost of new housing is extremely high; it is becoming

more doubtful that the average American family can afford new housing without some subsidy, we are drifting towards the "European situation." High land costs may be an extremely important deterrent to new housing construction.

It is our view that settlement patterns are more likely to radiate from the steel complex site along major highways to established communities (and their environs) having sewer and water infrastructure and having recognizable amenities. Distances of up to 35 miles, to such communities, as mentioned in the DEIS, are not an unreasonable commute. Among the communities in Pennsylvania which meet these standards and which are not in the coastal community area are Albion, Edinboro, Springboro-Conneautville, and Linesville, Waterford, Cambridge Springs, Saegertown, Meadville, and Conneaut Lake, and the Pymatuning communities are all established settlements within one hour of the steel complex site. None of these communities received significant mention in the DEIS.

Comment NMP-16:

Governmental objectives and actions may substantially alter the location of new growth. Local, county or regional agencies in coordination with their residents may develop and implement any variety of alternative policies. For example, governmental objectives might be directed toward the following goals:

Conservation and protection of the valuable agricultural resources along the coastal plains where the moderating effect of the Lake extends the growing season and provides a rich fruit and vegetable production. Such an option would obviously mitigate against the proposed scenario.

Minimize infrastructure costs related to new growth, so that new growth areas would be built upon extensions of existing systems. Extensive growth in rural areas east of the proposed Plant site would not fit this alternative.

Harness the growth to aid in the regeneration of communities. Such policy would focus attention on provision of housing units in the cities of Erie and Ashtabula, scenarios not incorporated in the proposal.

Attain an economy of size for smaller communities to the South where a limited growth would provide a more economic tax base to support infrastructure needed but not yet provided in those communities.

Individual communities may also choose not to accept the rate of growth projected for them. If any one community should take such actions as are available to them to exclude all growth in the hopes of maintaining a desired quality of life, then heavier impact would fall on communities willing to accept growth.

The options of accommodating impact growth are yet to be addressed by local government. However, even the few objectives outlined above indicate that substantial variation may exist in the impact of any one community from that which is projected. Some variability of range of the size and nature of impact in each community would be of substantial benefit to the local communities in establishing their growth objectives.

Comment SST-1:

We feel that statement does not take into consideration the impact on South Shenango Township.

Our township has the following assets which will be taken advantage of by the work force generated by the steel mill:

1. The township lies on a direct route between the proposed mill and Pittsburgh. We are within 30 miles of the site.

2. We have a complete sewer system which will be in operation in January 1979. This is 1 of 2 sewer systems in the entire area. People have to move into areas which are sewered since the area is unsuitable for on lot sewage.

Response CWP-5, NMP-16, SST-1:

Staff is aware that based on the variables involved and the number of different scenarios that exist, geographic distribution of the impact population may be different from the "Coastal Communities" scenario presented in the final EIS. A number of governmental or quasi-public agencies submitted independent population projections which in their opinion provided a more representative portrayal of the impacts associated with the proposed Lakefront Plant (refer to Chapter Four). In addition, a meeting conducted by the Federal Regional Council (FRC) and the Corps of Engineers was held to resolve these issues. A copy of the minutes of this meeting, together with the applicant's response, is appended to this statement. However, due to the highly speculative nature of any projection, the applicants' analysis has been left intact in the EIS for illustrative purposes. The Corps staff is cognizant of the fact that other projections may be more or less representative of future growth. Thus, local governmental officials and agency representatives are encouraged to review all potential scenarios when planning for future growth and development related to the proposed plant.

Comment CWP-6:

Whatever settlement patterns develop as a result of the construction of a steel complex it appears clear there will be a considerable need in many municipalities for funds to build community infrastructure and provide needed services. The expense of the components of communal living today are higher than ever, so much so that all local governments look to the State and Federal governments for substantial funding aid. This phenomenon of "dependence" is discussed vividly in an article in ASPO's Planning magazine of July 1978 where it was pointed out that in 1957 Federal aid for a group of large cities equalled 2.6% of their local revenues, this figure jumping to 50% in 1978 while total aid from outside sources in 1978, for these same cities, was 85% of the local revenue in 1978. There will inevitably be severe competition for State and Federal monies as the steel complex construction moves ahead. How will funding decisions be made? We feel this issue should have been addressed in some manner in the DEIS; to our knowledge it wasn't.

Comment DW-36:

The funding sources for all secondary developments have not been adequately described. Since these developments are in direct response to steel plant construction and operation, these data must form an integral part of EIS. Without this funding, catastrophic environmental and socio-economic consequences would occur.

Comment E-4:

The increase in population predicted for the area will require additional facilities and services provided by the City of Erie. The immediate need for expansion and the capital outlay makes it necessary for the State and Federal government to set up a special mechanism allowing us to obtain grants and other funding based on an accelerated process. We believe that the proposed Plant is good for our Country and Pennsylvania and as such the Country and the State should provide necessary resources in order to minimize the economic and social strains that will be generated by the Plant.

Comment E-8:

We wish to stress the need for special consideration by the Federal Government such as is being proposed for "energy boom towns" in order to reduce the financial strains that the adjacent communities will face because of the construction of a $3.5 billion plant within a relatively short time period.

Comment PHCOE-28.

"...the funding sources for all secondary developments have not been adequately described."

Comment MJB-2:

There will be a need for government funding to meet the planning needs for these communities. The communities are too small to provide for themselves. Slow, progressive growth can be provided for but not the rapid uncontrolled growth which will result from a huge steel mill. The E.I.S. should mention this as a definite need.

Response CWP-6, DW-36, E-4, E-8, PHCOE-28, MJB-2:

As an integral part of the planning process which now exists, the Federal Regional Council in Region III, Philadelphia (which serves Erie and Crawford Counties, Pennsylvania) and the Federal Regional Council in Region V, Chicago (which serves Ashtabula County, OH) are prepared to offer all possible assistance to impacted communities in obtaining Federal financial assistance to meet the needs created by construction and operation of the proposed mill.

Impacted communities must bear in mind, however, that each project application must meet the requirements of each individual Federal program, and must compete in the normal channels for funding. Thus, there is no guarantee that impacted communities will receive all the Federa financial assistance they desire, even with assistance from the Federal Regional Councils. Moreover, impacted communities should continue to work to assure that the Federally funded planning process achieves solid results, and that planning products can be used to support project applications as the best and least expensive course available to both local communities and to the Federal Government.

Communities in the impact area will be eligible to apply for funds from hundreds of Federal grant programs which help to finance water and sewer facilities, roads and other transportation facilities, housing, economic development, schools, hospitals and other medical facilities, social services, community facilities, etc. Each individual program has its own rules and funding procedures, and the funds available vary wicely from program to program and from fiscal year to fisce' year. Funding availability during the construction and operation phases cannot be estimated now, as the total funds available will depend upon future Presidential and Congressional budget decisions.

Since substantial portions of Federal aid flow through State Governments, impacted communities must be prepared to address many of their specific questions to the appropriate Pennsylvania or Ohio State agencies. Clearly, water and sewer facilities and highways will be among the most costly secondary needs, and much of the Federal money for these purposes is administered by the States. Communities impacted by the proposed U. S. Steel plant will need to understand the importance of the two State Governors as managers of many Federal programs

In general, each applicant (either the local or county Government or other organization) must meet the specific requirements of the program from which funds are being sought. A few Federal programs (such as community development block grants from HUD or revenue sharing) involve entitlements; in such cases the funding procedures and amounts are already established. In most programs, funding is discretionary or categorical, meaning that the applicant requests funds for a specific purpose and the grant-making agency awards funds in a competition among all applicants. Generally, competition for funding is national, regional, or Statewide.

Impacted communities will not generally be competing with each other for funds from a "pot" of money set aside for the impact area. There will rarely be such an impact area "pot." Most of the "pots" are national, regional, or Statewide. Application deadlines and procedures are established by program, so that the system is diverse and complex.

A summary of available programs and application procedures is available in the most recent edition of the Catalog of Federal Domestic Assistance.

From the viewpoint of impacted communities, the Federal grant process is complex and perhaps confesing. Extra professional assistance in preparing grant applications may be desirable. In Pennsylvania, the Federally funded Northwest Pennsylvania Futures Committee is directed to examine this problem and prepare a set of options for local elected officials. Ohio planners should do the same. By the summer of 1979, elected officials should be prepared to decide how best to achieve their "grantsmanship" objectives.

Local and county Governments in the impact area may frequently find that it will be useful to "merge" Federal grants from various Federal agencies together using the

joint funding process authorized by the Joint Funding and Simplification Act and OMB Circular A-111. Federal Regional Councils have the responsibility for implementing joint funding of various Federal grants. Local and county officials should contact the Federal Regional Councils directly to achieve joint-funded projects. A list of Federal grant programs which are suitable for joint funding is included at the end of this response.

Impacted communities will be required to meet the same standards and criteria as all other applicants. Criteria are established for each individual Federal program; there are no general rules which can be presented here, except to note that demonstration of a clear need is usually required, and satisfactory methods for meeting the need are usually necessary.

Communities should remember that many Federal programs require a local share which the communities must be prepared to fund. Important factors which generally affect success in obtaining Federal funds include: (a) inter-community cooperation and coordination throughout the impact area, (b) coordination with State agencies, and (c) consistency of funding applications with the products of the Federally funded planning process. Impacted communities should be prepared to demonstrate the consistency of individual project applications with these planning products and with other established area or regional plans.

Each Federal program contains a process which decides how much money will be allocated and where the money will go. Generally, initial decisions are made locally (or with the State Government, depending on the program) and final decisions are made by the Federal grant-making agency.

Local officials should bear two principles in mind: (a) the quality and soundness of local preparation will affect the extent of the Federal decision-making role, and (b) integration and coordination with the Federally funded planning process will affect the extent of Federal decision-making. Generally, sound local decisions which are consistent with Federally-funded planning efforts will give greater weight and standing to local decisions and will minimize Federal agency modification of local decisions. Local decision-makers and elected officials can play a significant role in determining where the money will go.

Total funds available for individual Federal programs will be determined by Presidential and Congressional budget decisions. Given the state of the national economy and the goal of reducing the Federal deficit, funding for most Federal domestic assistance programs will be limited and competition will be keen.

No plans exist to create a special mechanism for giving impacted communities a special top-priority for Federal funding. Criteria are established for each Federal program, both by law and by agency rules and regulations.

Resources of the Federal Regional Councils (III in Philadelphia and V in Chicago) will continue to be available to impacted communities to help identify Federal funding criteria and prospects for individual programs or project applications.

A list of Federal grant programs which are suitable for joint funding is included in Appendix "C"

Comment CWP-7:

The State and local government leaders in Pennsylvania have attempted to deal with this by organizing the Northwest Pennsylvania Futures Committee. One of the important objectives of this organization is to establish a consensus on a futures plan for the impact area. Such a plan, assuming it is developed, could be of inestimable value in providing direction for local State and Federal officials cast in the role of making decisions on public expenditures necessary to build good communities. This issue should have been addressed in the DEIS. It could have been addressed in relation to the Futures Committee which was organized in the spring of 1977.

Comment HUD-6·

The section on mitigation of adverse environmental effects of secondary impacts which cannot be avoided should be further developed. In particular a number of public expenditures will be required to accomodate quantified growth impacts, placing demands upon local state and federal agencies for funds. There will exist a need to establish priorities and justifications for such expenditures. Some particular projects may require direct coordination between localities and the states. Federal agencies have recommended the establishment of an interstate machanism between localities and/or the two states to provide a continuing mechanism for planning and policy coordination. The evaluation by Brian J. L. Berry in Appendix B indicates specific activities which local planners should consider, possibly on a coordinated basis through such an interstate mechanism. The establishment of such an interstate mechanism would measureably aid the handling of secondary impacts by the localities, states, and the federal government and is one mitigatng action that should be identified in the Final EIS. This is particularly important since many of the developing secondary impacts can not be clearly identified in the E.I.S. (see additional comments in the Berry evaluation dealing with the shortcomings of the Arthur D. Little analysis).

Response CWP-7, HUD-6:

Since the impact of the U.S. Steel plant would directly affect three counties in two States, the U.S. Department of Housing and Urban Development (HUD), in consultation with the Federal Regional Councils in Philadelphia and Chicago, decided in 1977 to require the development of an interstate mechanism as a condition to its award of planning grants in both Pennsylvania and Ohio. The HUD Region V planning grant recipient is the Eastgate Development and Transportation Agency (EDATA) and the HUD Region III planning grant recipient is the Pennsylvania Governor's Office of State Planning and Development (OSPD).

OSPD initiated formation of an interstate technical committee in order to immediately respond to the HUD requirement. The technical committee is a group of local and State planners from the three county impact area who meet to exchange information. It is not a substitute for a true interstate mechanism.

By the summer of 1978, confusion had developed in both States concerning the appropriate process to develop an interstate mechanism. The Federal Regional Councils in Regions III and V jointly convened and chaired a meeting in Conneaut, OH, on 23 August 1978 to discuss with representatives of elected officials and planning agencies in the three counties and two States the process for developing an interstate mechanism. The product of the meeting was an accepted and defined process and timetable for completing this task.

The timetable developed at the 23 August Conneaut meeting called for final formulation of the interstate mechanism by 31 December 1978. Because some of the participants in the development of an interstate mechanism have failed to adhere to the process and timetable, the 31 December deadline has passed without completion of the task.

Ohio has already adopted its own position on the goals and objectives desired. The Northwest Pennsylvania Futures Committee (NPFC), which is funded by the Economic Development Administration of the U.S. Department of Commerce, is responsible for coordinating a Pennsylvania position. The NPFC anticipates completing this task in late January or early February 1979, so that differences between the Ohio and Pennsylvania positions can be negotiated. Principal elected officials in the three county impact area must approve the final draft for an interstate mechanism before it is submitted to the Federal Regional Councils.

The Federal Regional Councils will prepare a single Federal response on the proposal, either approving it or suggesting modifications. Local elected officials and the Federal Regional Councils probably will not adopt the organization, goals, and operating procedures for an interstate mechanism before March 1979.

The interstate mechanism is proposed to become a recognized forum for exchange of information among local elected officials, for coordination of planning and development activities, and for resolution of potential conflicts in Federal funding applications between Ohio and Pennsylvania. In addition, the Federal Government is prepared to award grants and make other decisions consistent with desires of the interstate mechanism to the fullest possible extent. For the purposes of this arrangement, the two Federal Regional Councils will be the Federal coordinators and points of contact.

Although creation of a viable interstate mechanism will measureably aid the handling of secondary impacts, it will not eliminate the need for a sound local planning process (at the Ashtabula County level in Ohio and at the Erie and Crawford County level in Pennsylvania). Local and county planning efforts, along with the Federally-funded planning process, will continue to be critical points for coordinating secondary impacts and development.

Comment CWP-8:

In the Crawford County impact area, except for the city of Meadville, all municipalities are relatively small and are what one might call rural in nature, this includes both the townships and the boroughs. We do not believe the DEIS assesses the seriousness of the difficulties these municipalities have in handling affairs of municipal management. They find it impossible, individually, to afford qualified staff to deal with community planning programs, building and housing code administration, zoning enforcement, regulating on-lot sewage matters, maintenance of public utility systems and with the initiations of applications for State and Federal loans and grants. Should secondary growth impacts reach these municipalities new mechanisms will be needed to enable these communities to cope with these challenges. Intermunicipal and/or county administrative structures would seem to be ways through which these problems can be overcome. Currently on-lot sewage administration is a

function of local Government although the standards for this program are established by the State. We believe the administration of this program, so important to sound community development, is very uneven in our county.

Response CWP-8:

The difficulty small municipalities have in handling issues of municipal management is acknowledged. This lack of trained planning and related staff at the local level was also noted by the Erie County Planning Department and the Crawford County Planning Commission. Expansion of the size and use of the county planning and enforcement staffs or cooperative financing and use of independent planning staff by several communities could alleviate this problem.

Comment CWP-9:

The DEIS in Volume 3 is quite honest about pointing out possible difficult impacts relative to the construction of new housing. Regional Study Area builders are not accustomed to large-scale construction. There will very likely be shortages, from time to time, in the construction labor force available for housing production. Sewer and water system infrastructure is not in place in many areas which the DEIS believes should receive heavy settlement impacts. We would also point out that, unlike the 1950's where a Levittown was possible in the shadows of the Fairless Steel Works near Philadelphia, our current economy will make it, in our view, impossible to create housing of that quality at costs people can afford without considerable State and Federal subsidies. We see no mechanism available for the delivery of these subsidies.

Comment RW-9:

Speculation has shown us this effect has already escalated housing cost in Conneaut for both new and older homes. Should the mill be built, the influx of people would create an even greater increase.

Response CWP-9, RW-9:

As indicated, there are likely to be some problems in meeting new housing demand. However, these problems are more likely to be associated with phasing and timing new construction than with meeting long-term demand. While there may be bottlenecks because of the unavailability of workers and/or utility infrastructure, these will delay rather than prevent the provision of housing for new residents. If housing is not available at the time an in-migrant worker needs to be at his new job, he could commute or be a "weekly" until his family could move. In fact, some workers would probably do this in any case so that they could find buyers for their existing homes and so their children could complete a school term. Since operations workers (the majority of which are "movers") are expected to be hired after the peak construction period for each phase, operations weeklies would not have trouble finding temporary accommodations. Alternatively, some workers might not actually move into the study area at all, but instead choose to live in a community farther from the site, but with more available housing, thus substantially offsetting pressures on housing costs. Although the number of such workers is not likely to be large, the assumption that all plant workers would live in the Principal Study Area was chosen as a worst case approach to estimating impacts.

The issues of subsidies for housing is directly related to the expected incomes of home buyers. It is important to note that almost all of those people expected to move into the study area would be directly involved in the construction or operation of the proposed plant. These jobs would pay at least 50 percent more than the baseline average wage for the area. In addition, many of these new households would have more than one wage earner. Finally, many of these workers would have sold previous homes and thus have money available for down payments. Even if housing prices are driven up by supply shortages or speculation, these movers should be able to afford suitable housing without any subsidy. The same options discussed above to mitigate housing shortage impacts apply here. Workers who cannot afford or do not want to pay high housing costs may delay moving into the area until supply equals or exceeds demand, easing price escalation, or they may choose a longer drive to work in order to afford the type of housing they prefer. In summary, there is expected to be no need for housing subsidies for new residents of the study area.

Comment CWP-10:

As mentioned previously the population split identified in the DEIS between the two states is 60 percent Ohio, 40 percent Pennsylvania. With all due respect to the State of Ohio we believe it will be the reverse of this for the following reasons:

1. Educational services are better in Pennsylvania. School boards in the Ohio Regional Study Area have been unable to get public support for needed school facility construction.

2. There are more municipalities with the infrastructure necessary to support well developed, new residential neighborhoods in Pennsylvania. There are more cultural and recreational opportunities in the urbanized Pennsylvania municipalities and their environs.

3. Although the cost of living in Pennsylvania is somewhat higher than in Ohio, the delivery of services is, in general, better.

Response CWP-10:

Population distribution was not estimated primarily on the basis of differences between the two states. As discussed in Working Paper III (which was appended to the draft EIS), the majority of the plant operations employees are expected to live in the same community as the facility. About half of the in-migrant population is expected to live in Conneaut and Springfield, with about 75 percent of these in-migrants in Conneaut. The Ohio portion of the Local Study Area would be more adept to accept new population because of its significantly larger size and more developed infrastructure.

However, Pennsylvania is expected to attract about 40 percent of the new population outside of the Local Study Area for many of the reasons noted in the above comment.

Comment CWP-11:

The secondary impacts infrastructure and service needs derived from the steel complex were determined through the Simpact Model. This model is driven by the population figures assigned to it. Impacts are quantified by a "straight out" multiplier computation. We would point out that, while being an extremely useful tool in quantifying impacts, it is utterly dependent on the input population figures, and it is incapable of dealing with "feedback" situations, situations where "growth begets growth."

Response CWP-11:

The SIMPACT model is driven by data about a specific economic activity (the construction and operation of the proposed plant) and its interaction with the regional economy. The number of direct and secondary jobs and the number of these jobs which could be filled from the regional labor market determine requirements for in-migrant workers and hence the expected new population. The methodology and data sources used to derive the inputs to the economic/demographic portion of the model were described in detail in Working Papers II (Construction and III (Operations), which were appended to the draft statement.

The downstream infrastructure, service, and fiscal effects of new jobs and new populations can be described by a series of relatively simple mathematical relationships, and these are the basis for the model calculations. However, the relationship between the proposed plant and the creation of an unlinked growth climate cannot be quantified and discussion of it would be speculative. While this phenomenon has been observed in some instances, there is no data base which could be used to describe and model a cause and effect relationship. Therefore, the SIMPACT model contains no simulation of unlinked economic growth, although this possibility is discussed in qualitative terms in Chapter Four of this statement (i.e., the analysis of regional economic and land use impacts). If a specific level of unlinked economic growth and additional population were estimated externally, the SIMPACT methodology could be used to derive resulting infrastructure and service needs.

Comment CWP-12:

Currently there are four vocational high schools serving the Principal Impact Area in Erie, Crawford, and Ashtabula Counties, one in the city of Erie serving the city's youth, one in Summit Township in Erie County serving central and western Erie County, one in the city of Meadville serving all of Crawford County, and one in Ashtabula County serving that county. Pennsylvania and Ohio do not require local school districts to provide vocational education, but these schools have been eminently successful, so much so that each of them is currently over capacity. The DEIS indicates that the Erie and Ashtabula County vocational schools currently could each serve 1,500 add tional students in their jurisdictional area if they had the capacity. They do not have this capacity. In Erie County plans are being made to expand in order to accommodate an additional 800 students. In Ashtabula County bond issues to expand the vocational schools' capacity have been turned down by the electorate. In Crawford County the vocational high school year after year must turn down applicants; its present capacity is 900 students. Current (baseline) estimates indicate that if the facilities were in place or if the present facility could be used more extensively on a shift basis, another 300 students soon would be enrolled in vocational education in Crawford County. If the Regional Study Area truly is to serve its people, providing a labor force which will enable it to maximize potential secondary impacts deriving from the steel complex we believe vocational education opportunities must be greatly expanded by whatever means; it is hardly an optional issue given our present social and economic affairs.

Response CWP-12:

The comment on the importance of expanding vocational education opportunities in the Regional Study Area is noted. Subsequent to the preparation of the DEIS, the voters of Ashtabula County approved a bond issue for vocational school expansion.

Comment CWP-13:

The DEIS through the Simpact modeling process declares that a certain account of population should have one policeman to service it and applies a multiplication process to determine the additional policemen needed to handle increments of secondary impact population. This is a workable measure, where there is already a local policy protection structure in place. However, in our county's rural municipalities, dependent as they are on State Police barrack's service support, this is not a satisfactory solution to measuring police service needs. Once the "minimum threshold of need" is crossed for rural communities and they acquire the need for that first policeman it is unlikely that he can work effectively out of the State Policy barracks. New police service structures need to be developed. This issue is not addressed in the DEIS.

Response CWP-13:

According to the population-based threshold levels developed in Working Paper VII, which was appended to the draft EIS, each of the Coastal Communities would be required to have a local police department. However, only Conneaut, Ashtabula City, and Millcreek Township currently have 100 percent local law enforcement, while the other communities use State or county services. Therefore, population size is not the only factor which determines the type of law enforcement required. Other elements such as community preference and service cost must be considered.

In recognition of these facts, Chapter Four of the statement presents two law enforcement alternatives, one in which no new local police departments are created (except

in Springfield Township) and the other in which each community provides its own protection. In those communities currently without their own police departments, estimates of costs for a complete department (baseline in addition to impact) were made.

The continuation of existing patterns of protection was labeled more likely because of the significant costs (and tax implications) associated with establishing a new police department. However, it was also noted that there are many possible methods of combining local and State/county police protection, and that decisions would have to be made by each individual jurisdiction.

Comment CWP-14:

Traffic loads to and from the plant site were analyzed for the system of roads which insures the site's connection to Interstate 90. However, because I-90 parallels the Lake shore which is positioned northeasterly from the plant site, this interstate highway does not distribute traffic conveniently in a direct easterly direction; State Route 6N handles this easterly direction and in fact makes the most reasonable connection from I-90 at the plant site to Interstate 79 and southward traffic movements in Pennsylvania. Our view is that Route 6N east of I-90 is a significant highway in the traffic network related to the plant site yet it was not dealt with in the DEIS; it is a 2-lane facility and its level of service will fall greatly if it receives severe impacts.

Response CWP-14:

Traffic volumes on U.S. Route 6N directly east of I-90 have been analyzed. During the 7-8 a.m. peak hour in 1981, there would be 343 baseline vehicles and 182 plant-related vehicles for a total of 525. Corresponding figures for 1985 are 386 baseline and 120 plant-related for a total of 560. These figures are for Route 6N immediately east of I-90 and would decrease as the distance from the proposed plant increases.

U.S. Route 6N is a two-lane road in this area. The optimum capacity of such a road is 2,000 vehicles per hour. However, certain factors, such as the width of shoulders, distance to obstructions on the side of the road, profile, etc., tend to reduce this capacity. A more realistic estimate of the roadway's capacity would therefore be in the range of 1,700 to 1,500 vehicles per hour. Projected traffic volumes (baseline and plant-related) during the 7-8 a.m. peak hour are therefore far less than that which the road is capable of handling.

Comment CWP-15:

We submit that the Principal Impact Area delineation for Crawford County was poorly drawn. The following municipalities should have been included within this study area: Venango and Cambridge Townships, Cambridge Springs and Saegertown Boroughs, Vernon Township and the city of Meadville: Venango and Cambridge Townships and Cambridge Springs have ready access to State Route 6N via State Route 99 and U. S. Route 19. Saegertown has direct access to Interstate 79 via the Saegertown Interchange in Hayfield Township. Vernon Township and Meadville are easily accessible via the Meadville Interchange in Vernon Township. We realize that these observations at this late date probably do not warrant changing the many calculations based on the Principal Study Area delineation. But it needs to be pointed out that the impact area boundary used served to reduce certain impacts in Crawford County especially when one realizes that it is possible, for example, to leave downtown Meadville and in 55 to 60 minutes one's automobile is positioned in downtown Conneaut, Ohio.

Response CWP-15:

The areas and the boundaries of the Principal Study Area were established in conjunction, utilizing input from State, county, and local officials in both Ohio and Pennsylvania. One of the factors considered in deriving these boundaries was that available U. S. Steel data and findings from other studies indicated that the bulk of a plant's work force tends to reside within 35 miles of the work site. This 35-mile radius, modified by township boundaries, was used along with labor force areas and transportation corridors to define the Principal Study Area. Another of the factors considered in the principal geographic area of analysis was that it not be so large that the significance of impacts was diluted.

The definition of the Principal Study Area used in this analysis does not preclude the possibility of impacts in other parts of Crawford County. It is possible that some few new residents would choose to live outside the Principal Study Area, or even outside the three-county Regional Study Area. However, it is highly likely that any impacts in southern and eastern Crawford County would be quite small and insignificant.

Comment DA-1:

The proposed 16,000 foot diversion channel to replace the downstream portion of Turkey Creek would be better understood if a profile showing the planned grade was included in this report. Also, the grade elevations of intersecting channels should be shown. Will all tributary channels be provided an adequate outlet? A drain pipe (tile) installed in the old streambed of a size to carry needed drainage would be preferred over gravel bedding.

Comment DOC-8:

The desired solution for Turkey Creek is to leave it in as close to its natural state as is possible. The DEIS (Pages 6-68 and 6-69) considers the alternative "Set-back of Plant Structure to Achieve Protection of Turkey Creek and Adjoining Upland Habitat" but this alternative was not selected in the plan. Due to the significant adverse impact, the plans to fill and divert Turkey Creek should be abandoned in favor of the desired environmental solution - maintain the ecosystem of Turkey Creek in as close to its natural state as possible and relocate planned facilities.

Comment EPA-43:

c. Greenbelt with Relocated Creek - EPA would consider the alternative of the relocation of Turkey Creek if it was performed in an environmentally sensitive manner. Such a relocation should ensure the maintenance of site wetlands. The relocation and recreation of Turkey Creek as described in the DEIS is a step in the right direction but does not adequately mitigate aquatic habitat losses. After relocation w/incorporation of fishery enhancement structures there is no guarantee that a viable stream will result. In addition to the problems which may result due to improper engineering (problems include excess scour, stagnation, sedimentation, bank instability, etc.) the new stream would be subject to many of the same storm water drainage and air pollution particulate deposition problems as a preserved stream. Furthermore, while at least 33,000 ft. of Turkey Creek would be destroyed, only 16,000 ft. would be created. This leaves a net loss of 17,000 ft.

Comment EPA-44:

A perhaps better relocation scheme has been proposed by D'Appolonia, Inc. The proposal involves relocating the Creek to the East, with a new mouth created on Lake Erie. Fishery enhancement structures would be placed in a stream channel construction to reproduce natural conditions. While this study shows promise it has at least four serious pitfalls. First, the new channel would be 10,000 feet shorter than the existing waterway. Second, there is no guarantee of success. Third, the complete D'Appolonia study has never been made available to environmental agencies. Fourth, future plant expansion may threaten a relocated stream.

Prior to approving any relocation scheme the complete D'Appolonia study must be received and reviewed by EPA. If ecologically sensitive channel relocation is to be done national experts on the methodology should be consulted for specific design details. Soil studies to determine areas of promise for new channel location must be conducted. Attempts should be made to increase the length of any new channel so that it is as long as the old waterway. The water quality and habitat of any created stream should be at least as good as existing Turkey Creek. This would necessitate the insurance of stable gravel and cobble substrate, good riffle/pool ratios, good stream vegetative cover and stable side slopes. Only a full commitment by U.S.S. and environmental agencies to create a viable waterway will result in success. As this type of creation is relatively a new routine, which cannot be achieved overnight, the above commitment must be made for a period of years.

Comment FWS-12:

Paragraph 1.349 on page 1-274 mentions an "energy dissipation system" that would be installed at the confluence of Conneaut Creek and the proposed diversion channel. The system would have no effect on bare earth banks of the 16,000-foot long channel where erosion is likely to be a chronic problem.

Comment FWS-46:

A projected rise in water temperatures of only 1-2°C is predicted in the 16,000 foot diversion channel of Turkey Creek as described in paragraph 4.494, page 4-584. In an unshaded channel of this length and flow, a rise in water temperatures of between 10 and 15°F could reasonably be anticipated. The FEIS should provide rationalization for such a low prediction.

Comment FWS-47:

Also the same paragraph on page 4-585 indicates that a long-term problem of scouring action would be prevalent for several years as would elevated water temperatures because of the time required to establish natural (shading) vegetation. Correction of this problem would require complete riprapping of the entire 16,000 feet of channel and the relocation of existing trees and shrubs in sufficient quantities to maintain water temperatures at a level that would not adversely impact Conneaut Creek. Vegetation would have to be well established prior to the use of such a diversion canal.

Comment FWS-51:

Construction of the diversion channel would obliterate about 16 acres of vegetation, not 3 acres as stated in paragraph 5.97 (page 5-36).

Comment FWS-67:

According to paragraph 6.106, the applicant "finds that the costs generally outweigh the questionable benefits" of relocating Turkey Creek east of Rudd Road. What are the costs? How were costs estimated if, as noted in paragraph 6.91, the applicant developed no detailed design specifications?

Comment FWS-68:

We question whether the culverting and fill in Turkey Creek would be required to accommodate bridge or conveyor belt systems, as stated in paragraph 6.109. Certainly such structures could be erected without encroaching on the existing channel. Furthermore, conveyors could be partially or completely covered to prevent dust and spillage at crossing points.

Comment FWS-72:

Paragraph 6.113 also mentions increased project costs for bridges and conveyance systems. If these costs are to be determining factors in selecting alternatives, they should be included in the FEIS and compared with costs of totally filling and grading the Turkey Creek ravine.

Comment JB-10:

Turkey Creek will be destroyed eliminating fish and wildlife. This is one of only seven like streams in Ohio.

Comment EPA-39:

On page 6-3 and page 6-68 of the DEIS the applicant states that shifting of facilities to avoid Turkey Creek is feasible. However, plant efficiency may be reduced. From the discussion presented, it does not appear that the efficiency reduction is severe.

The applicant states that particulate emissions and storm water drainage will destroy the stream if it is left in close proximity to the plant. EPA believes these pollutant sources can be controlled through air pollution control technology and storm water management program.

In further defense of not preserving the Creek, the applicant states (page 6-9) that even if the Creek were to remain intact, no public access would be allowed. Therefore, it would be of no benefit to hunters and fishermen. EPA strongly disagrees with this statement. The off-site benefits of the stream may be substantial. Fish and wildlife are mobile and can be harvested outside of the site. These creatures also play a role in a much broader food and ecological web.

Comment EPA-41:

Turkey Creek should be maintained in its natural state with the terrestrial habitat adjacent to it protected. As a preliminary recommendation, it was suggested that a greenbelt area should be maintained up to the 630-foot (USGS Topographic Quadrangle) contour between Lake Erie and the abandoned Bessemer and Lake Erie Railroad spur and above this point to the 640-foot contour. This concept should be studied in detail to determine its environmental feasibility. If needed expansion of the buffer area should be considered, the applicant should base buffer strip requirements on the need to avoid stormwater and particulate pollution of Turkey Creek. Prior to the acceptance of the buffer area concept, erosion and sedimentation plans must be reviewed. These plans must be tailored to keep silt, construction debris, and slag waste out of Turkey Creek. They must simultaneously maintain sufficient flow in Turkey Creek to provide good aquatic habitat. Only plans which direct polluted runoff away from Turkey Creek can be acceptable. This polluted runoff could receive treatment to reduce organic and inorganic pollutants to acceptable levels prior to its discharge.

Comment LPT-4:

Many campers were observed at the mouth of Turkey Creek last year, along with numerous fishermen both there and upstream, yet it has been proposed that Turkey Creek and its tributaries would be filled in. This is shocking considering the varieties of fish that live in and/or reproduce in this stream (Rainbow Trout, Chinook and Coho Salmon, for instance!) The idea of filling in Turkey Creek and leveling the area is even stranger when you take into consideration the number of times Lake Road was flooded in this region last year!

Comment NAS-2:

We have noted the planned diversion of Turkey Creek into Conneaut Creek, and the proposed filling of 33,000 feet of existing stream bed. The EIS did not give a clear picture as to the extent that the waters of Turkey Creek will be modified by the diversion into Conneaut Creek. While the statement does discuss the existing water quality of Turkey Creek, there is no indication as to the relative abundance or scarcity of streams similar in quality, and the value of Turkey Creek as a tributary of Lake Erie.

Comment PFC-7:

Page 1-20 (1.36). We do not believe that the filling of Turkey Creek is necessary. A green belt along the stream would maintain the stream in place.

Comment PFC-31:

Page [illegible] (6.107-6.113). If properly accomplished, a green belt along Turkey Creek could preserve the existing aquatic biota.

Comment TU-12:

13. The discussion of alternative plant layout in paragraphs 6.7 and 6.8 does not adequately include an arrangement of facilities which could result in a "greenbelt" for Turkey Creek. That "greenbelt" was suggested by the Corps in a letter to the applicant dated 21 April 1977.

Comment TU-13:

The applicant says that costs outweigh the "questionable benefits" of relocating Turkey Creek east of Rudd Road. The applicant doesn't say what costs or how or whether they were estimated. The applicant admits in paragraph 6.91 that no detailed design specs were created. Hence the applicant has nothing to base cost estimates upon.

Comment TU-14:

In paragraph 6.109 the culverting and filling of Turkey Creek is said to be required for construction of bridge or conveyor belt systems. It would seem that conveyor belt construction design would permit bridging of Turkey Creek. More data should be included on such designs.

Response DA-1, DOC-8, EPA-39, EPA-41, EPA-43, EPA-44, FWS-12, FWS-45, FWS-47, FWS-67, FWS-68, FWS-61, FWS-72, JB-10, LPT-4, NAS-2, PFC-7, PFC-31, TU-12, TU-13, TU-14:

The applicant is no longer considering the original proposal to divert Turkey Creek into Conneaut Creek or the alternative to relocate Turkey Creek. Therefore impacts relative to these proposals are no longer considered to be germane to the project.

Instead, the applicant proposes to culvert the Turkey Creek channel from State Line Road to a point 460 meters (1,500 feet) upstream of Lake Erie.

Culverting would total 1,700 meters (5,600 feet) in length and would displace 2,300 meters (7,500 feet) of existing streambed. Elimination of stream meanders and some tributary corridor account for the 600 meter (1,900 feet) difference between the culvert length and displaced streambed length. The culvert would have an inside diameter of 3.66 meters (12 feet). In order to encourage upstream salmonid migration, the applicant proposes to install a [illegible] and resting pools and a skylight system which will provide subdued lighting along the entire length of the culvert.

Low flow characteristics of Turkey Creek present a formidable barrier to salmonid migration under both natural and project related conditions. Recognizing this problem, the applicant proposes to augment flow rates during peak migration periods by diverting a portion of the plant intake water into the upstream end of the culvert. The 3.8 kilometer (2.4 mile) reach of Turkey Creek on the applicant's property upstream from the culvert would be preserved in its natural state, and would be available to Pennsylvania Fish Commission personnel for aquatic organism management.

The applicant would encourage the Ohio Division of Wildlife to use the lower approximately 460 meters (1,500 feet) of Turkey Creek, extending from the mouth to the proposed culvert, as a salmonid stocking and nursery area. The applicant would provide stream habitat improvements in an effort to enhance the fishery potential of the area. In conjunction with this habitat improvement program, the applicant would permit fishermen access by boat to the mouth of Turkey Creek and the adjoining beach area.

A number of agencies and individuals have strongly urged that instead of altering the natural conformation of Turkey Creek, an extended conveyor system be installed to bridge the stream. Conveyance of materials and supplies in this manner it is hoped, would also allow for a buffer zone thereby preserving the integrity of Turkey Creek. The applicant feels that this is not a realistic or practicable solution as water quality would be severely degraded from localized fumigation, fugitive dust, runoff and spillage. Within a plant as large as the proposed steel mill, a certain amount of onsite contamination is unavoidable. Since Turkey Creek is in relatively close proximity to some of the more abrasive forms of processing (i.e. immediately downwind of the coke ovens), it is expected that incremental contaminant loading is inevitable. Even with a buffer zone, the intense activity surrounding the stream as well as constant stream crossing via tracks and conveyor systems would tend to diffuse onsite pollutants into the stream.

Further, the applicant has indicated that to implement such a conveyor system would significantly decrease plant efficiency.

Comment DA-2:

Refer to CRG-41

Comment DA-3:

A discussion of soils of the area is included in the section on Site Geology. In Table 2-309 under Soil Series, some words are misspelled. Correct Canadea to Caneadea; and Clavarack to Claverack. In footnote (3) the Soil Series are listed by county - Ashtabula and Erie. The word Claverack is again misspelled. Not all the Soil Series shown above in the table are included in the listing for the two counties. Some are in both counties. The word Conotton is repeated three times in the listing for Erie County.

Response DA-3:

The appropriate sections of the statement have been revised in response to the comment.

Soil series names appear more than once due to correlation of soil types and profiles for Ashtabula and Erie County.

Comment DA-4:

In our copy of this report, much of the left side of Table 2-310 was not legible.

Response DA-4:

Corrected as noted.

A clear copy of the above referenced table is included in this final EIS.

Comment DA-5:

The last sentence of Section 2.549 on page 2-702 should be corrected to read "...Conneaut soil profile is typically silt loam."

Response DA-5:

The sentence has been corrected in response to the comment.

Comment DA-6:

Tables 4-244 through 4-251 should show a reference to the map on page 4-701 (Figure 4-100).

Comment DA-7:

Seeding cleared areas to control erosion is discussed in Section 5.96, page 5-36. Tall fescue is a preferred grass in seedings for erosion control. It can be seeded alone or in a mixture with other grasses and/or legumes.

Response DA-6, DA-7:

The above referenced sections have been modified in response to the comments.

Comment DK-1:

Thus, it would appear that the better placement of the pipe would be buried below the bottom of the lake, and therefore both lines should be installed in that way.

Response DK-1:

Lake bottom surveys and detailed outfall pipe engineering would be necessary to determine the best procedure for installation of the outfall pipe. For example, at the shoreline crossing both pipes must be constructed in a manner which would provide protection from wave attack and winter ice damage. The most effective way to accomplish this would be to place the shore end of the pipes in a deep trench and backfill to original contours. In deeper water, there is no apparent need to bury the pipelines since they are removed from the high energy ice and wave regime, but protection could be provided by a shield of riprap.

The discharge pipeline would have a very slight slope (2.3 feet in 6,060 feet) and special care would be taken to insure that there were no low spots which might tend to act as a sump or trap suspended particulate matter. This design also includes a diffuser which discharges horizontally and parallel to the shoreline at 1.3 meters above the lake bottom. Based on the existing knowledge of the geometry of the lake and pipeline, the discharge pipe would be fully buried for a distance of approximately 2,500 feet offshore. Beyond that point (at which the water depth is 20 feet), the trench for the pipe becomes progressively shallower until, at the diffuser, the pipe would be lying on the lake bottom. The exposed section of the pipe would be covered with riprap to provide protection from ice, wave action, or ship anchors.

In the case of the intake pipe, different considerations affect the geometry of the pipe at the offshore end. Hydraulic flow considerations control the size, elevation, and geometry of the intake structure and determine the elevation of the invert, which turns out to be below the lake bottom. Connecting the shoreline crossing with the intake structure using a uniformly sloping pipe with no low spots results in the buried intake pipe design shown in the permit application. Except for these considerations, a design similar to that of the discharge pipe would be satisfactory for the intake pipe.

Comment DK-2.

Therefore it is suggested that the discharge location of discharge pipe be located so that the discharged wastewater is definitely carried to the center of the lake for better dilution - and to lessen the effect on the shorelines and Presque Isle State Park.

Comment DK-3:

Since discharge is not 120 miles away from Erie but only 30 miles or so, it would be necessary to locate the discharge into these currents traveling to the center of the lake to pick up this natural diluting effect.

Comment DK-4:

The Impact Statement does not adequately look into the possiblity of locating the discharge into these cross currents. If this requires the extension and relocation of the 90" discharge pipe a few or several miles, this is entirely feasible as illustrated by the 780 mile pipe line recently completed across Alaska.

Comment MM-5:

U.S. Steel should build their discharge pipe farther out into the lake basin where the discharge would not interfere with the waters off Presque Isle.

Comment PHCOE-12:

"...wouldn't it be wise that if the discharge from U. S. Steel would be located out in that current they - - if this current can take the pollution out to the center of the lake where it can be diluted - -and it would seem that somebody knows where that current is."

Response DK-2, DK-3, DK-4, MM-5, PHCOE-12:

The modeling analysis indicated that very little additional dilution occurs as the outfall is moved further offshore. Thus, the 10-meter discharge depth, replacing the original proposal for a shortline outfall, was proposed more upon the basis of the relatively fewer sensitive aquatic biota at the 10-meter depth than upon dilution capability. The costs associated with moving the discharge further offshore than the 10-meter depth would include not only monetary costs for the applicant, but also the potential adverse impact of the increased likelihood that the effluent would directly enter the often oxygen-depleted deep waters of the Central Basin.

Comment DK-3:

Refer to DK-2

Comment DK-4:

Refer to DK-2

Comment DK-5:

Refer to CRG-8

Comment DK-6:

The draft Impact Statement does not adequately consider the effect on this National Natural Landmark as past history indicates that areas 'downstream' from effluent discharges from steel plants are affected.

Comment MM-1:

Presque Isle is, therefore, going to catch all the waste like a giant arm, along its beaches. Furthermore, ammonia concentrations would be .94 mg/l over the EPA criterion of 0.02, with a worst case concentration going as high as 2.9 mg/l over the EPA standards. A very serious problem due to the fluctuation from low to high concentration levels.

Response DK-6, MM-1:

The flow along the shore of Lake Erie tends to parallel the shorelines and where the shore bends, so do the flow lines. Thus, although the flow is east-northeast at the proposed plant site, it does not flow in a straight line directly to Presque Isle, but rather tends to bend to the north around Presque Isle. Nonetheless, under westerly and northwesterly winds, surface currents do move towards the shore and towards Presque Isle. However, by the time the effluent would reach this peninsula it would have mixed so thoroughly with the lake water that it would be expected to be indistinguishable and have no measurable impact on Presque Isle.

The nearshore flow in Lake Erie does not travel in straight but tends to follow an irregular course depending on the configuration of the shoreline. Although the flow is east-northeast in the vicinity of the Lakefront site currents are diverted northward as they approach the Presque Isle Peninsula. However, during periods when the winds are out of the west and northwest surface currents are directed toward Presque Isle and the adjacent shoreline. In any case the effluents discharged from the proposed facility must meet all applicable Ohio water quality standards at the perimeter of the mixing zone. Beyond the mixing zone these constituents would be further diluted and eventually assimilated as a result of the many biological, chemical, and physical interactions that naturally occur in the water column. Since the Presque Isle peninsula is situated more than 20 miles to the northeast of the Lakefront site there is little chance that plant effluents would have any impact on this National Natural Landmark. A more detailed analysis of the downcurrent effects on water quality would occur during the NPDES permit review process.

Comment DK-7

In reviewing the Draft Environmental Impact Statement for the U.S. Steel proposed plant, I did not locate a listing of "discharges" to be measured in order to be able to determine if EPA limits are being met or exceeded, or how often these measurements are to be made. It is possible that this information is included somewhere within the four volume draft, but if not included then the draft statement is lacking. This then needs to be added.

Response DK-7:

Development of a monitoring program for the lakefront Plant discharge and the selection of the appropriate test parameters will not be determined until such time as the NPDES permit application is reviewed by the appropriate regulatory agencies. The U.S. Steel Corporation must file an application for this permit at least 180 days prior to date it proposes to discharge from the new source. Although Ohio EPA has the lead role in issuing discharge permits, the USEPA has the responsibility of reviewing the process and determining if the proposed permit is consistent with federal regulations and policies.

The applicant will be required to submit Discharge Monitoring reports to both the Ohio EPA and the USEPA. Utilizing the data contained in these reports both agencies will be able to judge the performance of the treatment facilities and determine if the final effluent limitations are achievable when the plant attains production at design capacity. The U.S. Steel Corporation would be required to report, within five days, all events which caused the daily maximum limitation to be exceeded.

Comment DK-8:

Also if the established limits are exceeded, the steps to be taken to get the "discharges" back within allowable limits need to be called out and the time to do so should also be called out. (i.e., if limits exceeded, part of offending operation should be reduced in output, shut down, or all operations shut down until correction is accomplished.)

Comment DK-9:

The time limit to correct any excessive discharge, should be call out in the final draft and be made part of the permit based upon the "danger" of the discharge and perhaps, the amount the limit is being exceeded over the allowable or the desired amount.

Comment DK-10.

This type of control is important for not only the area around U.S. Steel, but for U.S. Steel itself to be able to act responsively as the Chairman of the Board, Mr. Spears, stated U.S. Steel would in the movie shown by U.S. Steel at each of the four hearings. Thus U.S. Steel should have very little, if any, objection to including steps as suggested, since they intend to be well within the limits established. In event the limits should be exceeded, U.S. Steel should have or should desire to have, a workable plan to get back within the limits in a reasonable time. Failing to do so, U.S. Steel should not only be willing to limit or close down whatever operation(s) required but should be guided by a plan to do so. This would prove helpful, I believe, to U.S. Steel, the EPA, the Army Corps of Engineers, etc.

Thus if this "call out" of steps to be taken is indeed missing, it should be added to the final draft and to the permit.

Response DK-8, DK-9, DK-10:

The applicant will be required to submit discharge monitoring reports to the USEPA and the State of Ohio Environmental Protection Agency which contain daily sampling results. These data will be used to judge the performance of the treatment facilities and to determine whether or not the facility can achieve final effluent limitations when the plant attains production at design capacity. In addition, the applicant must report, within five days, any daily maximum limitation which is exceeded. Thus, the USEPA will not have to wait until the plant is in full operation to determine if the final limitations can be met or are being achieved.

EPA experience at other U.S. Steel Corporation plants where treatment facilities have been installed to meet effluent limitations, indicates that the time out of compliance usually lasts no more than two days. Noncompliance generally occurs due to minor equipment malfunctions or negligent operation. This time period includes the day the violation occurred, and the lag time experienced for the applicant to learn a violation had occurred and to take corrective action.

Most of the treatment facilities the applicant is proposing to use at the lakefront plant are based on mechanical or chemical control technology. Therefore, immediate corrective action can be expected and demanded. However, one of the treatment facilities is a biological treatment plant. In such a plant the most severe malfunction is the killing of the bacteria. If this were to occur, as long as a month might be required for the bacteria to become reestablished. However, the applicant has operated two such plants for more than four years and has not experienced any adverse effects at either facility.

Should violations of water quality standards occur during plant operations, direct action could be taken by State or federal authorities to correct the situation. Time limits for corrective action and cleanup plans would be stipulated in the NPDES permit, not the Department of the Army permit. The applicant intends to apply for an NPDES permit at a later date.

Comment DK-9:

Refer to DK-8

Comment DK-10:

Refer to DK-8

Comment DOC-1:

In our opinion, the DEIS does not provide sufficient discussion on possible mitigative strategies which could ameliorate the highly significant impacts on living aquatic resources for which the NMFS has a responsibility. Furthermore, the lack of quantitative analyses on expected entrainment and impingement losses of phytoplankton, zooplankton, ichthyoplankton and juvenile and adult fishes, does not allow us to make an accurate evaluation of the potential impacts on recreational and commercial fish species and their supporting food web.

Comment DOC-2:

The intake structure as designed may function as an artificial reef initially attracting benthic organisms and subsequently fish feeding on the benthos and other fish. Entrainment of smaller organisms and impingement of larger organisms originally attracted to the intake site by the artificial reef-like habitat is predictable.

Comment DOC-4:

Page 4-785, paragraph 2. The applicant has not provided any analysis of expected entrainment losses of phytoplankton, zooplankton or ichthyoplankton. The applicant has indicated only that losses will be several orders of magnitude below losses experienced at a power generating facility near Detroit, Michigan. This section is inadequate. In order to determine entrainment and impingement losses, particularly of ichthyoplankton, juvenile and adult fishes, a sampling program designed to measure relative abundances of ichthyofauna should be accomplished. The intake structure as proposed will function as an attractant to ichthyofauna and may contribute to serious losses of certain year classes of recreational and commercial species.

Comment EDH-5:

The DEIS indicates that 100 percent of any impingement in the intake structure would result in 100 percent mortality, thus any organism in the immediate area would be removed from the ecology of the lake. The data contained in A.D. Little's assessment is not adequate to evaluate if this impingement and mortality would be significantly adverse.

Comment EDH-6:

The location of the discharge structure also is lacking in specific data on ichthyoplankton and the effects it will have on the area.

Comment EDH-9:

Based upon all of the foregoing observations and comments, this office would recommend to the Corps of Engineers that the proposal for intake and outfall structures in Lake Erie be delayed or denied until such time as the above questions can be answered. Our observation of the intake and outfall structure would be that it might be more ecologically advantageous to move the outfall to the east and further offshore and put the intake further offshore. However, without adequate ichthyoplankton and other studies in other areas, this recommendation could not be fully substantiated.

Comment EDH-37:

Will young salmon or trout run into the intake pipe? They may have the urge to run with the current (i.e., as if going downstream).

Comment EPA-58:

The data and analysis in the Draft EIS leave little choice but to reject the intake as presently located and designed pursuant to Section 316(b) of the Clean Water Act. The present design does not minimize impingement and the present location may be unacceptable from the entrainment standpoint.

Comment EPA-59:

It may be possible to eliminate impingement entirely by using 3/8" mesh screening at the intake. Alternative intake designs incorporating 3/8" mesh or smaller screening may be feasible but may develop operational problems such as plugging from debris, cladophora, or frazzle ice.

Comment EPA-60:

Additional aquatic sampling is necessary to establish whether or not another location would significantly reduce entrainment. The cost of lengthening the pipe and associated problems should also be given. If the water withdrawal can be further decreased, then relocation of the intake may not be necessary.

Comment FWS-53:

Based on the Fish and Wildlife Service's review of raw data not available in this EIS but provided in the Interim Reports by the applicant's consultant, it would appear that ichthyoplankton is present in sufficient quantities to raise serious concerns about possible entrainment losses at the proposed location of the intake. However, another potential problem which should be addressed in the FEIS in paragraph 4.697, Impact of the Water Intake, is of artificial concentration of fish populations. A review of the intake design features indicates that the size and quantity of riprap materials to be used in its construction will likely attract fish populations (both adult and larval forms) to this "protective cover" in greatly increased concentrations. The intake structure will involve approximately 3/4 of an acre of the lake's bottom, and the cluster of 12 intake heads will be surrounded with 500 cubic yards or rock riprap and concrete block (paragraph 1.346, page 271). Such a structure will attract juvenile and adult fish, especially, in an area where the catch per unit effort already indicates high fish populations.

Comment FWS-54:

The analysis of impingement data (pages 4-792 and 4-794) is unsatisfactory. The discussion does not mention mesh size and dimensions of gill nets, duration of gill net sets at each location, and the size of fishes collected. Therefore, it is impossible for the reader to determine catch per unit effort and, on that basis, to predict at which sampling location impingement would be least serious.

Comment FWS-65:

Discussion of alternate intake locations (paragraph 6.84) is brief. The basis for discussion is unsatisfactory because the presentation and analysis of data in Chapters Two and Four are confusing and incomplete. Attention has been called to specific deficiencies in previous comments.

Comment LPT-3:

Another point of contention is the 30 m. depth limit that was used for the study, especially in light of the fact that this was along the border of the feeding patterns of certain species of fish such as the Freshwater Drum.

Comment PDER-7:

The water intake may have an adverse impact on the fisheries in the area. The area is a spawning area, and large amounts of fish eggs and drifting fish larvae will be sucked into the water intake and subsequently killed by the plant water usage. Relocation of the water intake may be desirable. Similarly, relocation of the discharge point should be considered to avoid fisheries problems. Because of inadequate data in the Draft EIS, we cannot determine where a more desirable intake-discharge point should be located.

Comment PDER-8:

During the entire Draft EIS process, we have indicated that the data collection program would not provide adequate data to make a good evaluation of both the impact of the project and for identifying any mitigative measures that might be taken to offset irreversible impacts on fish and aquatic life. This lack of data cannot be used as a foundation for negative declarations, and we will not accept negative conclusions which are based on inadequate data.

Comment PFC-11:

Page 1-271 (1.346). Mean intake velocity means little, maximum intake velocity of 6.55 feet/second could cause excessive and very undesirable entrainment and impingement.

Comment PFC-27:

Page 4-785 (4.699). Impingement and entrainment could have a serious effect on fish stocks as the intake is in a nursery area.

Comment PFC-28:

Page 4-791 (4.708). Not only the location but the design of the intake should be reevaluated. More study should be made on the vertical distribution of organisms, particularly fish, to see if raising the intake for example, might lessen entrainment.

Response DOC-1, DOC-2, DOC-4, DOC-11, EDH-5, EDH-9, EDH-37, EPA-58, EPA-59, EPA-60, FWS-53, FWS-54, FWS-66, PDER-7, PDER-8, PFC-11, PFC-27, PFC-28, EDH-6, LPT-3:

Entrainment impacts on phytoplankton, zooplankton and ichthyoplanktonwere discussed in Chapter Four of the draft EIS under the section entitled Impacts on Aquatic Biota. The analyses have been updated with the most recent sampling results provided by the applicant. Station specific data for ichthyoplankton have been included in Appendix D of this final EIS to allow the reader to technically compare station collection sampling results and to ascertain relative entrainment impacts. It is from these data that the critical impact analyses were derived and summarized.

Impingement impacts are also discussed in Chapter Four of this EIS in the section entitled, Impacts on Aquatic Biota. The proposed intake contains 12 ports rather than one to achieve a mean intake velocity of 0.26 feet per second, and a maximum approach velocity not greater than 0.55 feet per second. The typographical error on page 1-271 of the draft EIS has been corrected to read 0.55 feet per second rather than 6.55. Intake approach velocities of 0.5 feet per second or less are recommended by the USEPA, U.S. Nuclear Regulatory Commission, and the U.S. Fish and Wildlife Service.

Ambient current velocities measured in 1977, in the vicinity of the proposed intake were found to be in the range of 0.45-0.90 feet per second. On the basis of the

current regime in this area, intake approach velocities are not expected to result in impingement problems since juvenile and adult fish should be capable of moving away from the zone of water withdrawal. The use of velocity caps would change the withdrawal characteristics from a net vertical movement of water to a predominantly horizontal flow minimizing the entrainment effects on plankton.

Since the issuance of the draft EIS, the applicant has agreed to incorporate Best Available Technology (BAT) which has been demonstrated to be practicable in minimizing adverse effects. The USEPA has stated that wedge wire screens currently reflect BAT. These structures are placed over the intake port to create a condition of uniform flow which inturn results in a relatively low entrance velocity that is expected to significantly reduce impingement impacts. Further, if a small enough screen mesh can be effectively incorporated in the design, entrainment impacts may be greatly reduced as well. Additional discussion of wedge wire screens is provided in Chapter Four of this final EIS in the section entitled Impacts on Aquatic Biota. Final design specifications are yet to be determined and would be decided upon during the NPDES permit review.

The draft EIS indicated that due to the anticipated entrainment losses the location of the intake structure should also be subject to further evaluation. Several agencies including USEPA and U.S. Fish and Wildlife Service supported this view and recommended that additional ichthyoplankton sampling be conducted to more precisely locate the zone of minimum ichthyoplankton concentration. Subsequently, the U.S. Fish and Wildlife Service developed a detailed sampling proposal for use by the applicant and on 9 January 1979, the applicant agreed to perform the necessary sampling. A summary of this proposal is presented in Chapter Four of this final EIS while the document in its entirety is included in Appendix D. The data collected during this sampling effort would be evaluated at a later date during the review of the NPDES permit application for the proposed Lakefront steel plant.

Several comments refer to the potential for the proposed riprap surrounding the intake structure to act as an "artificial reef." It is acknowledged that riprap structures can serve effectively as a suitable substrate for various species of benthos and periphyton, afford cover and attract fish. The extent of biotic enrichment however, is not expected to be significant, particularly since the area of concern is relatively small. Further if spawning were to occur within the area to be riprapped ichthyoplankton would likely be dispersed immediately downdrift by ambient currents. However, if these concerns are substantiated the applicant has indicated that the riprap could be eliminated from the area around the proposed intake.

Comment DOC-2:

Refer to DOC-1

Comment DOC-3:

Refer to CEQ-41

Comment DOC-4:

Refer to DOC-1

Comment DOC-5:

Refer to A-4

Comment DOC-6:

1. Extensive utilization of the Lake Erie shoreline. Review of the plans for the Lakefront Steel Mill as described by the Environmental Impact Statement indicates that little consideration was given to the accommodation of public needs and to maintenance of natural environment, as much as possible. The National Environmental Policy Act of 1969 requires federal agencies to "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities." A major natural resource at the proposed plant site is the Lake Erie shoreline. The five kilometers of shoreline will be fenced and public access eliminated. It appears that to satisfy NEPA requirements, a buffer zone of approximately 500 meter width should be created along the shoreline separating Lake Erie and the fenced plant site. This buffer zone should remain free of any structures and storage facilities, except pipelines, and be easily accessible to local population. Due to the lake breeze during the public use hours, no adverse effects from plant air pollution are expected. A greenbelt of planted large growing trees could mask the structures and help to reduce air pollutants in reaching Lake Erie. If for safety reasons, access to the U.S. East Breakwater Extension is not desirable, one or two fishing piers could be built at other locations on the shoreline.

Comment DOC-7:

A plan to share the amenities of the shoreline would require either relocation of the proposed storage areas and structures planned to be within the buffer zone to some other location on the site, or to move the entire plant layout a short distance to the south, or to move the entire plant or parts of it to alternative sites (Paragraph 6.14). In addition to creation of a buffer zone, some utilities around the Great Lakes recently started to provide recreational facilities such as additional access roads, parking areas, boat launching ramps and others (e.g., on Lake Michigan shore, Wisconsin), also a public park with nature trails and observation points (Lake Huron, Michigan). Considering total costs of the Steel Mill, costs of the accommodation to NEPA requirements should not be a critical item.

Comment FWS-70

We recognize the applicant's desire to restrict access to a huge manufacturing complex such as the proposed Lakefront plant. However, it is not clear from paragrpah 6.111 why a fence could not be erected south of Lake Road so as to maintain public access along Lake Road to the east breakwater and the beach near the mouth of Turkey Creek. This would facilitate uses by fishermen and waterfowl hunters without unreasonably affecting plant operation.

Comment OSC-1:

First the proposed project would unnecessarily sacrifice a significant portion of natural Great Lakes shoreline to industrial development. Such shoreline is a fast disappearing amenity for the people of the Midwest, and its scarcity is probably more acute in eastern Ohio than in any other stretch along the Great Lakes. The urgency of this obligation to protect shoreline and preserve it for use by future generations is recognized, nationally, in the recent Federal legislation for coastal zone management. Yet the draft Environmental Impact Statement fails to provide consideration of the amount of undeveloped shoreline that remains, in relation to the amount that would be withdrawn by this project. The draft fails even to respond to the suggestion offered frequently at the 1977 public meetings, that it consider alternatives in design that might combine recreational use of the shoreline itself with a setback of production facilities which could operate just as well further inland.

Response DOC-6, DOC-7, FWS-70, OSC-1:

To meet future demand and maintain a competitive position in the market, the U.S. Steel Corporation plans to construct a large steel manufacturing plant on a tract of land fronting Lake Erie between Conneaut, OH and W. Springfield, PA. The entire site on which this facility is to be built is privately owned and except for existing roads is not generally open to the public.

A buffer zone could be established between Lake Road and Lake Erie. This shoreline is rugged consisting of water-filled depressions and dense growths of tree and shrubs. Topography ranges from flat to relatively rolling relief and the elevation of the shoreline above Lake Erie ranges from about 50 feet at the eastern end of the site to approximately 40 in the vicinity of the western site boundary. Where the shoreline meets Lake Erie a nearly vertical bluff is encountered with few access points to the Lake itself. In addition, the entire shoreline has been severely eroded causing undercutting and slumping of the bluff. Beach areas are nonexistent except at the mouth of Turkey Creek.

Maintenance of a buffer zone approximately 500 meters in width would represent several problems. First, the establishment of this zone would require the commitment of 250 hectares (625 acres) of land. Since the water treatment plant, oxygen plant, sinter plant, and portions of the casting facility and hot strip mill would occupy this area, relocation would be required. Overall the plant would have to be moved southward jeopardizing the reach of Turkey Creek between State Line Road and the Conrail tracks. This is the very same area that would be retained in its natural state under the applicant's current plan to manage fish and wildlife resources on the Lakefront Plant site.

Solid waste disposal areas must also be moved since they would probably be displaced by the relocation of plant structures. Thus, it may be necessary to locate these facilities at the eastern end of the site thereby committing additional wildlife habitat and sensitive environmental areas such as the inundated red maple stand near Elmwood Road.

Secondly, maintenance of a buffer would represent a hazard to the general public because of the unstable nature of the shoreline and thus a liability problem to the applicant. To provide the proper stabilization, shore protection would be needed along the entire site perimeter which would be costly and impractical in terms of the potential for down current erosion. In addition, the shoreline fronting the plant site offers little protection from Lake Erie storms; therefore, the installation of boat ramps or the construction of fishing piers would be of questionable benefit since they would be frequently closed for repairs and maintenance.

The applicant plans to maintain the existing vegetative buffer zone between the Lake and the proposed plant, thus masking individual plant structures. However, as a barrier to air pollutants, this plant screen would be only marginally effective in areas where the emission sources were situated at ground level.

The applicant has developed a fish and wildlife management plan for the lakefront site which, among other items, contains provisions for public access by boat to the mouth of Turkey Creek and the donation of a 94-acre forested tract of land for use as a park or gamelands unit. Further, discussion of the elements contained in this management plan can be found in Chapter Four and Five of this final EIS.

Comment DOC-7:

Refer to DOC-6

Comment DOC-8:

Refer to DA-1

Comment DOC-9:

Chemical Effluents Discharged to Lake Erie. It is planned that "all treated process water streams, cooling tower blowdown, miscellaneous service water, roof runoff and treated sanitary wastewater would be combined into a single wastewater stream and discharged to Lake Erie via a multi-port diffuser located 5,300 feet offshore."

The DEIS identifies the following contaminants in the discharge to Lake Erie: oxygen demanding substances, dissolved nutrients, suspended solids, phenols, total dissolved

solids, heavy metals, organics, trace elements and ammonia. It states that some of these contaminants are toxic and some of them bioaccumulate. The intent of Annex 10, Hazardous Polluting Substances of the Great Lakes Agreement of 1978 (to be signed shortly by President Carter and Premier Trudeau) is to identify all substances known to have toxic effects on aquatic and animal life and a reasonable possibility of being discharged into the Great Lakes Syste.. It is my impression that the DEIS is incomplete in this regard and additional information on potential hazardous polluting substances from the planned operations should be provided by U. S. Steel Corporation.

Comment DOC-10:

From the material presented in the DEIS, it would appear that the U. S. Steel Corporation plan for effluent discharge to Lake Erie is not in compliance with the intent of the United States-Canada Agreement for the following chemicals and substances: phenols, total dissolved solids, heavy metals, organics, trace elements and ammonia (See Annex I, Specific objectives of the Great Lakes Agreement of 1978). It is likewise not apparent that the U. S. Steel Corporation plan includes all reasonable and practicable effluent treatment measures for these contaminants. Additional data should be presented in this regard to insure that suitable alternatives are included in the plan.

Response DOC-9, DOC-10:

This 1978 Agreement, which builds upon the earlier 1972 Agreement, was not formally approved by the two countries until 22 November 1978. Prior to this date, the draft copies of this document were not available and as a result were not discussed in the draft statement.

The comments correctly state that the new 1978 Agreement places strong focus on cooperative and individual efforts to control the discharges of "toxic substances" and other pollutants to the Great Lakes. One portion of the Agreement (Annex 10) requires that the parties maintain a list of pollutants known or suspected to have adverse effects on the lake's biota and a risk of being discharged. The parties further have agreed to: "Develop and implement programs and measures to minimize or eliminate the risk of release of hazardous polluting substances to the Great Lakes System." The draft statement did include several sections (4-503 to 4-516) which discussed in depth the chemicals that were expected to be in the proposed plant's discharge. A refined list could only be prepared from analyses of the actual effluent once the plant is in operation. By that time it is possible that the parties will have developed specific regulations -- relating to the "programs and measures" referred to above which could require some action on the part of the applicant.

The 1978 Agreement (in Annex I) also formally adopted specific objectives for numerous chemical, physical, microbiological, and radiological parameters or pollutants. These recent objectives are, with two exceptions, the same as those listed in Table 2-338 of the draft statement which is a comparison of water quality criteria for Lake Erie relative to substances proposed for Lakefront plant discharge. The two exceptions are: cadmium, for which the objective is 0.0002 mg/l and phenols, for which the objective is 0.001 mg/l. Except for the cadmium objective, these IJC objectives differ little or not at all from legally enforceable water quality standards currently in effect in the State of Ohio. Ohio's standard for cadmium is 0.0012 mg/l. It should be noted that current levels of cadmium in Lake Erie waters near the project site are typically about 0.001 mg/l with some values up to 0.005 mg/l, as indicated in Tables 4-286 and 4-287 of the Draft EIS. Additionally, the analysis of known effects of cadmium on aquatic life as presented in Chapter Four of the Draft EIS included that "predicted concentrations of cadmium, even in the effluent itself, a generally below the reported effects levels ..."

Comment DOC-10:

Refer to DOC-9

Comment DOC-11:

Of concern is the siting of the intake structure relative to the abundance of larval fishes. While a single intake structure will have greatest impact on the fishes locally, the cumulative effect of many water withdrawals can affect the total lake. It is important, therefore, to site each intake structure so as to minimize the entrainment of important biota (e.g., larval fish are considered the most critical). The DEIS makes no mention of alternative siting of the water intake structure in order to minimize the effects of entrainment of biota. Such an analysis should be made and a cost-beneficial decision made on the basis of existing data and best judgment. The Department of Interior, Fish and Wildlife Service, Great Lakes Fishery Laboratory is presently undertaking a study entitled "Fish Nursery and Spawning Atlas of Selected Areas of the Great Lakes"; the Great Lakes Fishery Laboratory should be consulted on water intake siting.

Response DOC-11:

The applicant recognizes the importance of siting the intake in such a way that the adverse impacts associated with the entrainment or impingement of Lake Erie fish species is minimized. To insure that the site selected meets this requirement the applicant has agreed to conduct additional sampling in Lake Erie adjacent to the proposed Lakefront plant site. The results of this investigation will be evaluated by the appropriate regulatory and review agencies responsible for authorizing the operation of this intake.

The U.S. Fish and Wildlife Service has taken the lead in formulating the scope of work for the supplemental field studies. During the development of this plan as well as the reivew of the resultant data this agency will probably solicit the views of the Great Lakes Fishery Laboratory.

The Corps staff contacted Dr. Aubert at the Great Lakes Fishery Laboratory to obtain a copy of the document entitled "Fish Nursery and Spawning Atlas of Selected Areas of the Great Lakes." Dr. Aubert advised that the atlas would not be published for at least two to three years.

Comment DOC-12:

In Volume 3, page 4-589, NOS is concerned over the apparent lack of plans for "Abnormal Events." Cannot some contingency plans be formulated? Also, on page 4-639, the maximum increase of lake water temperature of 10°C in summer and 19°C in winter seems abnormally high and very possibly detrimental to the biota.

Comment DW-20:

4. Both thermal air and water pollution are very difficult to assess, but there are some predictable consequences of this pollution. Coho and Shenoah Salmon will not run through warmer water. Flyways of migratory birds will be affected. What consequences will this pollution have on ico formations which protect the shoreline? Will algae production increase because of the increased water temperatures? These are only two of many unanswerable questions which will be answered only after the damage is done.

Comment EDH-27:

If gizzard shad die off, will U. S. Steel clean them up? What if there's a massive kill? Will it affect beaches to the east? Gizzard shad decompose very slowly and a massive die-off might have an adverse effect on the tourist trade in the Erie area. (See page 4-808.)

Comment EDH-31:

We look with some concern with respect to the statement on page 4-643. "The effluent would typically be 2°C warmer than the lake water, but could be as high as 10°C above ambient." In 1978, our lake temperature read 76°F (24.4°C). If the temperature were 10 degrees warmer, the temperature of the effluent could be 94°F (34.4°C). If the water were to stagnate, so to speak, aquatic life might be seriously affected. It may not be a problem, but we believe that there should be more of a discussion as to the worst affect on aquatic life.

Comment RK-1:

As a resident of Pittsburgh, I have seen what rolling mills can do to a River. The Monongahela river has not been able to cool itself, and the only aquatic life capable of surviving in this heated body of water is Catfish and/or Carp. Lake Erie is balanced on a see saw between becoming "A New Dead Sea", or a Modern example of mans compatibility with nature. With all the other polluters of this beautiful lake, can Lake Erie withstand the increase in temperature?

Response DOC-12, DW-20, EDH-27, EDH-31, RK-1:

The discussion presented in Chapter Four of the draft EIS indicates that the projected worst case temperature impacts associated with plant operation are negligible. The discharge velocity precludes fish residency and acclimation where temperatures are highest and potentially lethal. Further, the portion of the thermal plume in which fish are likely to reside in any abundance would have a temperature differential in the range of 2°C or less above ambient. This is not considered a critical change over existing conditions and consequently no significant impacts due to cold shock are anticipated.

Since the draft EIS was prepared the applicant has agreed to construct final equalization lagoons. These would serve to dissipate a considerable amount of heat energy by exposing large volumes of water to the atmosphere. Most importantly, they will tend to reduce the worst case, "peak" discharge temperatures, and tend to approximate those considered "typical" in the draft EIS.

In summary, Corps staff concurs with the applicant that fishery impacts relative to thermal effluent should be negligible. Although no data are available to define the incremental beneficial effects to be derived from the equalization lagoons, it is expected that their utilization would further insure the applicant's initial projection of no significant impact.

Comment DOC-13:

Geodetic control survey monuments may be located in the proposed project area. If there is any planned activity which will disturb or destroy these monuments, NOS (National Ocean Survey) requires not less than 90 days' notification in advance of such activity in order to plan for their relocation. NOS recommends that funding for this project includes the cost of any relocation required for NOS monuments.

Response DOC-13:

The applicant is aware of the procedures that must be followed if there is a need to relocate geodetic control survey monuments. Should the existing monuments be found to interfere with the proposed action the applicant will notify the National Ocean Survey within the time limits specified.

Comment DOT-1:

1. The transportation chapter in general should contain statements clearly indicating whether or not the portions of a particular impact caused by a transportation facility have been included in the overall assessment of such impact. We consider this to be important particularly with regard to those facilities such as highways, docks, etc., upon which the successful operation of the plant, or orderly development of the region

depend. If such facilities are to be constructed with Federal financial assistance, their progress could be delayed unless we are able to conclude that their related impacts are minimal or are accounted for in the overall assessment of impacts. As presently written, it is not clear whether or not the draft accounts for possible transportation induced portions of:

a. Effects on historical sites, recreational areas, falling under Section "4(f)" of the DOT Act, or other publicly owned property including open space,

b. housing needs caused by displacement due to acquisition of property,

c. water quality impact and effect on aquatic biota,

d. air quality both during construction and in permanent operation,

e. noise levels.

Response DOT-1:

The analysis of transportation impacts is based on several different access and egress scenarios involving potential new highway routes or modifications of the existing highway network. By illustrating these alternative transportation schemes the reviewer should not be led to believe that the Corps of Engineers is advocating or rejecting certain types of highway construction projects. For example, the Interstate 90 direct access link was identified as a potentially viable plan because of the degree of benefit provided and the relatively low magnitude of construction related environmental impacts. However, there may be other solutions which would afford better traffic flow at an even lower environmental cost.

The total responsibility for highway siting, design, construction, and compliance with the National Environmental Policy Act rests with the Federal Department of Transportation and its counterpart agencies at the State and local governmental level. At the present time, the transportation proposals contained in this Environmental Impact Statement are only defined in general terms, since the site specific data necessary to perform a detailed impact assessment are not available. Presumably, this information will be generated by the appropriate transportation agencies if and when a formal decision is made to proceed with construction of the Lakefront plant.

However, in an attempt to address this comment, the following responses are provided:

a. The proposed highway access routes identified in this final EIS do not appear to involve recreational areas as defined in Section 4(f) of the DOT Act. However, no statement can be made regarding the effect on unknown historic or archaeological resources since the required cultural resource surveys have not been conducted.

b. In the case of I-90 direct access link it is probable that two to four homes would be displaced as a result of highway construction. Insufficient data are available to predict the housing impacts associated with other transportation schemes.

c. Impacts on water quality and the aquatic biota can be minimized by employing proper construction and design safeguards. However, the magnitude of these impacts cannot be determined due to the lack of detailed design data.

d. No additional data are available regarding air quality during construction and operation beyond that which is presented in Chapters Four and Six of this Environmental Impact Statement.

e. The noise impacts associated with the I-90 direct access route are summarized in Chapter Four, while the effects related to alternative transportation proposals are presented in Chapter Six of this EIS.

Comment DOT-2:

The discussions of alternate means of transporting workers to the job site, i.e., by bus or rail, tend to conclude that such a proposal is not suitable because of the capital investment which could be required for new equipment. We believe that a preliminary estimate of the number of "permanent" workers which might be obtained in the city of Erie should be made in order to provide insight as to whether or not such an investment would be warranted over the long term.

Comment PDOT-9:

Paragraph 5.52 of the DEIS states that traffic congestion at major highway intersections near the site will be a problem even if major improvements in the roadway network are completed. Also, subsequent paragraphs discuss mitigation measures to reduce congestion. We feel that the public transportation alternative should receive the detailed analysis mentioned in Paragraph 5.56 and the results discussed in the FEIS. More specifically, bus, rail passenger service and vanpooling seem to warrant further consideration. It is agreed that highway levels of service will be unsatisfactory. This mandates a traffic-free public transit alternative. For several years, a light rapid transit service has been sought for the Erie Metropolitan area on the vacant trackbed of one of the former New York Central Railroad (now ConRail) tracks between Harbor Creek and Lake City, passing downtown Erie and the Erie International Airport. Lake City is but 13 miles from Conneaut. The transit proposal, amended to serve U.S. Steel, could provide transit for a significant number of employees, reducing highway congestion and augmenting transit ridership.

Subsidies for public transit are not a restraint. Federal laws provide more transit assistance than Erie can presently utilize. All public transit services require subsidy. A service that minimizes subsidy is recommended.

For commuting other than parallel to the Lake Shore, vanpooling will aid in mitigating the predicted congestion. Each van will replace approximately ten automobiles. Each rail car will replace 30 automobiles. Energy will be conserved, pollution will be abated, travel will be safer and more economical. A comprehensive, multi-modal solution must be considered.

In addition, local commuter bikeways should be considered as an additional traffic and energy conservation measure.

Comment DOT-6:

The Traffic and Transportation facilities Section (Page 4-404) should be expanded to include estimated Average Daily Traffic in the project area.

Response DOT-6:

The statement has been modified in response to the comment.

Comment DOT-7:

Unseparated railroad/highway crossings are recognized as a major problem facing Conneaut. The EIS should indicate the number, location, and relative community service and safety impacts of the crossings, and the approximate cost to eliminate them.

Comment PDOT-8:

Paragraph 4.352 of the DEIS indicates that the traffic volumes on secondary and local roads were not considered in the analysis of traffic requirements for the mill. We feel that these secondary and local roads traffic volumes should be considered and discussed in the FEIS with special emphasis being placed on intersections with primary routes and at railroad grade crossings where unsafe signing, signalization or sight-distance conditions will be created.

Response DOT-7, PDOT-8:

The increase in highway traffic due to the proposed plant is not expected to be very significant at most of these at-grade rail crossings. One exception to this is at the Ohio SR-7 crossing of the Norfolk & Western tracks in Conneaut City where the city has a funded plan to construct a grade separation in late 1979. The impact of plant-related rail and highway traffic would not create unsafe signing, signalization or sight-distance conditions beyond those that already exist. Since the problems of community safety and service impacts and the cost to eliminate these at-grade crossings already exist and are expected to be only slightly impacted by the proposed plant, analysis of these issues was not believed to be within the scope of the EIS. For these reasons, the applicant has no specific mitigation measures for at-grade rail crossings. However, a general discussion on possible mitigation for traffic congestion is provided in Chapter Four of this final EIS.

The roadway network was defined to consist generally of the numbered highway routes in the vicinity of the project. Minor roadways, such as local town streets, were not included in the network for several reasons.

The large number of secondary and local roads create a complex network which would require an analysis effort on an order of magnitude greater than that carried out for the EIS. For example, the material used to assess the plant-related impact on traffic contains 143 pages of tables, each of which has provision for 270 numerical entries. These data represent the results of the analysis and do not include the calculations which were carried out to obtain the results.

To attempt to predict traffic flows in greater detail by using a more complex network which includes secondary and local roads would not appreciably change overall results in terms of key intersection level of service and would result in uncertain results in terms of traffic flows on these smaller roadways, which in many cases will handle small traffic volumes.

The main reason for such uncertainty in the results is the variability in the actual geographic site specific distribution of plant workers and lack of information regarding baseline traffic flows on these hundreds of local streets. A detailed and accurate traffic flow projection for secondary and local roads can only be made if the population of origins, destinations, and departure times is accurately known. It is for these reasons that the traffic flow analysis was carried utilizing the limited network of numbered highways shown in the DEIS.

Comment DOT-8:

The discussion of noise (Page xi) should be expanded to indicate the probable effect of increased railroad, highway, and waterway activity on hospitals, schools, and other noise sensitive land uses.

Response DOT-8:

In paragraph (25) it is stated: "Some change in noise levels would be incurred as railroads, waterways, and highways experience increased usage by plant-related traffic." The word "some" is ambiguous in this case, and should have read as "negligible to small changes...." There would be negligible effect of transportation generated noises on any noise sensitive land uses.

The noise levels associated with plant-related usage of railroads, waterways, and highways are considered to be negligible based on the impact analysis performed by the applicant. For example, the greatest increase in transportation noise is that caused by highway traffic. Such increases are 0 to 3 db and occur adjacent to Routes I-90 and US6N where no known sensitive land uses exist. Originally the above referenced section of the draft EIS indicated that there would be some change in noise levels, since this is not the case the wording has been altered accordingly.

Comment DOT-9:

The discussion of alternative methods of shipping products (Page 6-30) indicates that greater dependence on railroad facilities could be beneficial. The final EIS should

indicate what steps are being taken to promote such increased use of railroads, and should indicate any major impediments to such increased usage.

Response DOT-9:

The percentage of products which will be shipped by rail can only be estimated with a very limited accuracy Shipping of products by rail may be accomplished directly if the receiver is served by a rail spur and has the capabilities to unload and handle rail shipments. Otherwise, rail shipment would involve transfer from rail to truck at a facility capable of handling both transportation modes. In general, direct rail shipments are less costly than truck shipments, but multi-mode shipments involving transfers can be more costly. The degree to which rail shipments of products may be practically utilized will depend on the destinations of the products, the unloading and transfer facilites available at receivers' locations and intermediate points and the rate structures which are in effect for these transport modes at the time the plant is in operation.

Comment DOT-10:

Paragraph 1.46, Page 1-26, implies that water-borne shipping will not be attempted during the winter season. The final EIS should clearly indicate what is intended in this regard.

Response DOT-10:

The shipping season at Conneaut has historically been nine to ten months long. In recent years, however, shipping seasons have sometimes extended to 11 and occasionally to 12 months. Improvements in U.S. Coast Guard ice-breaking capabilities may make year-round, or close to year-round, operation of the port a more common occurrence in the future. Port capacity projections contained in this EIS are based on an assumed shipping season of only nine to ten months and are found to be adequate to handle the projected vessel traffic and tonnages. The recent increase in the length of the shipping season and the potential improvement in ice-breaking capabilities would provide a larger margin of port capacity over projected traffic volumes.

Comment DOT-11:

Paragraph 2.424, Page 2-525, should indicate whether or not 1,100-foot vessels are planned. If such vessels are planned, there will be secondary impacts caused by dredging and port modifications necessary to accommodate increased draft and length unless they are operated at less than maximum capacity. Additional discussion is suggested.

Response DOT-11:

The harbor modifications proposed by the applicant would be able to accommodate lake vessels up to 1,100 feet in length. Extension of the pier and construction of the unloading dock is not expected to interfere with the safe navigation of these vessels c reduce the overall capacity of Conneaut Harbor. Utilization of large lake vessels would not require modifications of existing harbor facilities beyond those already proposed by the applicant.

Comment DOT-12:

Refer to CRG-51

Comment DOT-13:

An additional paragraph should be added following paragraph 1.477, page 1-363. Such paragraph should indicate that Section 311 of the Federal Water Pollution Control Act (P.L. 92-500) is administered by the Coast Guard in cooperation with EPA, and that such act covers onshore as well as offshore facilities. Title 40, CFR 110.3 indicates that no visible sheen is permissible.

Response DOT-13:

The statement has been modified in response to the comment.

Comment DOT-14:

Refer to CRG-51

Comment DOT-15:

Refer to CRG-51

Comment DOT-16:

Paragraph 4.572, Page 4-678, and Paragraph 4.760, Page 4-855, can be combined or cross referenced in regard to treatment of oil laden runoff.

Response DOT-16:

The comment is acknowledged.

Comment DOT-17:

Paragraph 4.591, page 4-697, should indicate that the Spill Prevention Containment and Countermeasure Plans will indicate measures for coping with spills anywhere on the facility grounds.

Response DOT-17:

Such plans are currently required by the EPA (Code of Federal Regulations, 40, part 112) for all facilities where oil is stored. The EPA recently proposed (Federal Register, 1 September 1978; p. 39276) that similar rules be adopted for any facility requiring an NPDES permit where a spill of any hazardous substance is possible. Plans prepared as a result of such rules must identify the potential spill areas and consider what containment or cleanup actions would be taken in case of an actual spill. Thus, it is likely that the control measures for oil and hazardous substances stored at the Lakefront site would be developed during the review of the National Pollutant Discharge Elimination System (NPDES) permit application.

Comment DOT-18:

With regard to construction in flood plains, granting of 404 permits, etc., we believe that the Corps consideration should, if possible, take into account the probable secondary development induced by construction of the mill. This could greatly simplify the process of obtaining permits necessary for future work or Federal actions to be done by others.

Response DOT-18:

The predictions of secondary development induced by construction of the proposed mill, as addressed in the draft EIS, were based on State-of-the-Art analyses. The analyses indicate that some secondary development could occur in flood plains and the draft EIS discussed the potential impacts associated with such development. A prediction of the exact locations, amount of development, and type of development in each flood plain is not possible. Corps staff concurs that if an accurate prediction were possible it would greatly simplify the processing of future Federal, State, and local permits including Department of the Army Section 404 permits. However, at the present time this is not possible.

Comment DW-1:

Refer to CCM-4

Comment DW-2:

Due to the increased population, large water shortages will occur in some municipalities. (3.9 p. 3-4) These shortages will further be aggravated by lowered water table hydrology occurring during construction. Already, water shortages exist in Albion and Girard. These areas have also been refused financial assistance by both Federal and State agencies (Erie Times, 9 August 1978).

Response DW-2:

Discussions regarding water shortages and the need for water supply systems are presented in Chapter Four of this Final Environmental Impact Statement. Dewatering activities associated with the construction of the proposed plant would be temporary. Based on the results of onsite hydrologic investigations, the effect on the water table would be confined to the immediate area of construction and would have no impact on the groundwater supplies of surrounding communities.

Comment DW-3:

3. "The location of solid wastes sites is already a problem in the Coastal Communities of both States" (3.10; p.3-5). Existing sites are nearing capacity, the rapid large influx of people and waste will cause severe solid waste disposal problems. Poor planning and handling of this waste will cause some environmental damage to coastal zone areas. People of this area are well aware of the problems of finding landfill sites anywhere in the coastal zone. This issue has drastically divided the different communities making cooperation difficult.

Comment PDER-19:

7. The report does not assess the adequacy or provisions for solid waste collection and disposal for the impacted municipalities.

Response DW-3, PDER-19:

The applicant is aware of the environmental problems which can be caused by improper solid waste disposal. However, additional wastes generated by new residents will increase the baseline rate of municipal solid waste generation in the coastal communities by only a small increment.

The EIS extensively discusses the provisions for municipal solid waste collection and disposal. Chapter 2 discusses the baseline conditions for the local study area, coastal communities, and the region and includes information on collection procedures, cost of service, available disposal sites, and several other topics. Chapter Four discusses the project's impacts, including additional waste generated and the associated collection and disposal site requirements. These two sections were based on the data contained in Working Paper XVI, Solid Waste, which was appended to the draft EIS.

Presently, only three approved landfills serve the entire three-county region: New Lyme and Doherty in Ashtabula County and Lakeview in Erie County. They receive only 630 tons (from actual rates at landfills) of the total 1,468 tons generated daily. The remainder may go to other counties or States; and some may be open dumped.

At the present waste generation rate of 536,000 tons per year, the required landfill space is about 29 acres per year. Based on the projected 1990 baseline population and waste generation rates, approximately 670,000 tons of waste would be generated annually, requiring a landfill capacity of 36 acres per year. A total of 402 acres would be required for the baseline population during 1979-1990 while during the same period, five additional acres would be required for adequate landfill disposal for the impact population. Annual acreage requirements in 1990 would be 36 acres per year for the principal study area baseline population compared to one acre per year for the new operation-related population; this is only a 2.7 percent increase.

The fill area currently available in the region is 242 acres, assuming the Lakeview expansion is permitted. By 1979 the area available will have been reduced by about 60 acres. By 1990, if present trends continue, the Regional Study Area would fall short by about 220 acres in the baseline case and 225 acres if the proposed U.S. Steel plant is built.

If the existing solid waste disposal sites fall short of the required future capacity by a large margin, the region's residents need to provide additional sanitary landfill site capacity whether or not the proposed plant is built. Ohio and Pennsylvania are presently planning studies which will investigate solid waste management problems (particularly provision of adequate landfill capacity or alternative disposal methods) and their possible resolutions. Several sites in the Regional Study Area have been surveyed and declared hydrogeologically acceptable for landfill development. Two major barriers to new landfill site approvals are local zoning and the enormous local public opposition to any expansions or new construction. Affirmative permitting and zoning decisions may be politically possible only under conditions of crisis.

Comment DW-4:

The rural character of the area will change drastically causing losses of open spaces (recreation, fishing and hunting, etc. will be reduced), valued natural features (record maple trees, swamp white oak and rare vegetation) (4.624; p. 4-734) and prime agricultural land. (3.12; p. 3-5)

Response DW-4:

Despite the potential for accelerated change of rural or undeveloped land to more urban land use, land use is projected to remain predominantly rural through 1990. The proportion of agricultural/rural land is anticipated to remain 91 percent of land use in the Ohio Regional Study Area and 88 percent in the Pennsylvania Regional Study Area as indicated in Chapter Four of this EIS. Further, the character of the area could also change in response to development unlinked to the proposed plant over the short term, and in response to a variety of preferences after 1990. These issues are highly speculative.

Comment DW-5:

Noise pollution will increase due to additional trains, trucks, cars, and heavy construction vehicles. This will be quite severe for Raccoon Creek Park.

Response DW-5:

The noise levels at Raccoon Creek Park are represented, for worst case, by the data presented for the measurement (and prediction) Location No. 1, at the intersection of Elmwood and Lake Roads. In the draft EIS data on noise effects were provided in the following tables: Table 4-269, page 4-564; process activities, Table 4-272, page 4-570; highway traffic, Table 4-273, page 4-575; and rail traffic, paragraph 4.482, page 4-571. This information indicates that the noise effects would be negligible.

Comment DW-6, DW-7:

6. If applicant intends to clear any large amount of trees or brush by burning, significant temporary air quality degradation will occur. During burning periods, recreation will be adversely affected downwind. This burning, coupled with noise pollution, would make Raccoon Creek Park totally unusable for recreational purposes.

Response DW-6, DW-7:

As indicated in Chapter One of this final EIS both Ohio and Pennsylvania have regulations which are designed to control air quality degradation resulting from open burning.

Corps staff believes that environmentally acceptable alternatives exist. For example, vegetation cleared form the site could be chipped and used for erosion control, while larger trees could be stockpiled and made available as a source of firewood for local residents.

The ultimate decision regarding the disposition of vegetation removed during the construction phase rests with the Pennsylvania Department of Environmental Resources and the Ohio Environmental Protection Agency.

Comment DW-8:

Refer to CPA-3

Comment DW-9:

Situation during construction would cloud swimming waters of nearby recreational areas. Since this situation will be suspended, there is a possibility that Presque Isle beaches could be affected. Increased particulates in water will make filtration of water for drinking more difficult. The situation will also force fish out of immediate area, especially Conneaut Creek, and losses of prime spawning areas will be quite extensive.

Comment EDM-4:

Since prevailing lake winds are from the northwest, what will lake currents from Conneaut do to the bathing beaches of Presque Isle State Park, if the steel mill waters are not strictly cleansed before returning to Lake Erie waters? Environmental conditions regarding piscatorial matters and swimming features are very serious unless strict operating control of plant effluents is conducted.

Comment JB-11:

There will be no public access to Lake Erie from the public dock in Conneaut to Raccoon Creek Park in Pennsylvania.

Comment TU-10:

Impacts on recreation paragraph 5.13, page 5-5 fail to say that citizens will lose access to Lake Erie shoreline. This will be a major blow to recreation in Ohio, and a major loss to all American citizens.

Response DW-9, EDM-4, JB-11, TU-10:

Access to Lake Erie by way of the Lakefront site is severely restricted due to the prevalence of sheer bluffs and the absence of beaches. Only the areas in the vicinity of the mouth of Turkey Creek and the U.S. Breakwater Extension have been used in the past by the general public. Thus, the commitment of this section of shoreline to the proposed project would not place any significant burden on adjoining recreational areas.

The applicant is cognizant of the recreational importance of the breakwater and the Turkey Creek outlet and now plans to allow boat access to both areas. In addition, a tract of land comprising 38 hectares (94 acres) east of Elmwood Road and north of the Conrail tracks would be made available to Commonwealth of Pennsylvania as a new game-lands unit or as an addition to Raccoon County Park. The main stem of Raccoon Creek flowing through this property could be opened to the general public thereby increasing fishing opportunities.

Sediment loading would be controlled during construction through implementation of an on-site erosion control plan. In addition, the siltation effects occurring during dredging operations would be localized and would not have any adverse impact on Presque Isle.

The effluents discharged from the proposed plant must meet all applicable Ohio water quality standards at the perimeter of the mixing zone established by the USEPA and the Ohio Environmental Protection Agency. Beyond the mixing zone these constituents would be further diluted and eventually assimilated as a result of the many biological, chemical and physical interactions that naturally occur in the water column. Since the Presque Isle Peninsula is situated more than 20 miles to the northeast of the Lakefront site there is little chance that plant effluents would have any impact on this National Natural Landmark. A more detailed analysis of the down current effects on water quality would occur during the NPDES permit review process.

Comment DW-10:

Route 20 Bypass to mill from I-96 is in conflict with existing residential uses, land use plans and policies in Conneaut. (3.11)

Response DW-10:

As stated in the draft EIS the proposed bypass alternative does appear to be in conflict with existing residential uses, land use plans, and policies in Conneaut. However, certain city officials tend to favor this proposal as indicated by the City Engineer's letter of comment on the draft Statement dated 11 August 1976.

In any case, the ultimate selection of a given highway access alternative would not occur until the issue has been thoroughly evaluated by the appropriate transportation planning agencies.

Comment DW-11:

Refer to ADN-3

Comment DW-12:

Refer to CRG-37

Comment DW-13:

Due to the higher wages of steel construction workers, the cost of living in both the local and regional study areas will dramatically increase over baseline projections. A large industrial development in an isolated and rural area could create a "boomtown" atmosphere in the local study area (4.64). Because of increased competition for limited housing and rental units, inflationary prices will be charged. Availability of lower cost material products (food, clothing, furniture, etc.) will be replaced by higher priced products. The elderly, lower-income families and newly married couples will be most adversely affected by these raises in the cost of living. Medical expenditures will also increase over baseline due to overcrowded facilities. Because of increased population, power demands will also rise dramatically. "Secondary electricity consumption in the Ohio Principal Study Area is expected to rise roughly from 1.6 million kWh in 1969 to just over 60 million kWh in 1990" (4.363, p. 4-427). "Secondary electricity consumption in the Pennsylvania Principal Study Area is expected to rise roughly from three million kWh in 1979 to about 35 million kWh in 1990" (4.364; p. 4-427). Distillate oil demands will also rise in the Ohio Principal Study Area from less than 700 barrels in 1979 to over 25,000 barrels in 1990 (4.376, p. 4-449). In Pennsylvania, the distillate oil consumption will rise from 300 barrels in 1979 to 5,000 barrels in 1990. Here is where the discrepancies in population are most important. If these projected figures are tripled, our power source demands become astronomical over baseline predictions. This power will then become incredibly expensive given the current increases in power and heating costs. It is all too apparent how utility companies pass on prices of new plant construction to their customers. These facts prove that the price for power and heat will skyrocket affecting every resident of the regional study areas.

Response DW-13:

The cost of living in the local and regional study areas would not increase "dramatically" over baseline projections. What is stated in paragraph 4.64 of the draft EIS is that "it is likely that the cost of living in the area would increase somewhat more rapidly than might otherwise be expected under baseline conditions." This paragraph continues that "a large industrial development in an isolated rural area could create a 'boom town' atmosphere with accompanying price inflation. However, residents of the Regional Study Area have alternatives to paying high local costs." If prices in Conneaut become disproportionately high, residents would likely transfer more of their spending to Ashtabula City, or Erie, so that exhorbitant local price levels could not be sustained. Residents of the most publicized boom towns such as Rock Springs, Wyoming, and Fairbanks, Alaska, did not have similar options.

Price increases would occur in the housing market as in-migrants compete for both existing and new units, and most of the demand created by the proposed project is expected to be for single-family rather than multi-family units. Therefore, it is reasonable to assume that housing purchase prices would be more seriously impacted than rents. Residents who are in the market for a new home would thus be affected by plant-related price increases, but they would represent a very small share of the total population. In addition, it is likely that housing costs would be most significantly affected in the communities closest to the proposed plant, and higher prices could be offset by choosing a house farther from the site.

The EIS does not contain a projection of overcrowding in hospital facilities. Projections do indicate that two hospitals in Ashtabula County would require modest expansion, while the Erie County hospitals have sufficient capacity to handle the new population without any expansion. This latter conclusion was supported in comments received from Health Systems, Inc. of Erie County. Furthermore, health care costs do not appear to fit classic supply/demand price models. One widely held theory, in fact, assumes that an oversupply of medical facilities and personnel tends to increase costs because some members of the medical community must rely on a smaller supply of patients to produce a predetermined amount of income. Many of the measures instituted by the U.S. Department of Health to reduce health care costs are based on closing excess bed capacity. In any case, the applicant believes that the number of new residents projected and the amount of new income expected to be brought into the study area would not be large enough to significantly affect medical facility capacity or health care costs.

The energy consumption figures cited are for secondary consumption only - that is, energy required by new population and new commercial and industrial users other than the plant itself. These requirements are considered insignificant (less than one percent) when compared to baseline energy demand. Moreover, even with the electric power requirement of the plant added to total secondary demand, there would be no need for the utilities serving the study area to build new electrical generating capacity solely to serve plant-related growth. Thus the proposed plant would have no effect on prices paid by area residents for power and heat.

Comment DW-14:

Refer to CRG-35

Comment DW-15:

During construction, all other construction will be adversely affected perhaps halted completely. This will happen because the steel plant will use all union construction workers within 100 miles. Therefore, any further construction will have to pay higher wages in order to draw workers into the area. One way to avoid this possibility would be to use nonunion workers, but this would be totally unacceptable to local unions. Secondary construction would also be impaired by the unavailability of capital because U. S. Steel will use so much capital to build their plant. Without this secondary construction, the resulting socioeconomic and environmental consequences would be disastrous.

Response DW-15:

The construction of the proposed plant would have no significant adverse impacts on the availability of either labor or capital for other construction in the area.

The EIS did not state or assume that the steel plant would use all union construction workers within 100 miles. Rather, an estimate was made of the construction workers expected to be available within a 100-mile radius. This estimate, described in detail in Working Paper II, which was appended in the draft EIS, was based on consideration of current union membership and employment and labor requirements of other planned projects (i.e., Perry and Coho power stations). Working Paper II shows that the proposed plant is expected to employ between 10 percent and 30 percent of all union members within a 100-mile radius in each skill category when peak manpower requirements occur. Moreover, it is common practice in the construction industry for workers to commute long distances for temporary employment. When there are shortages of workers in certain skill categories (at the Lakefront plant or other projects), it will be possible to attract union members from outside the 100-mile radius without paying higher wages.

Secondly, not all construction work is done by union members. Large-scale industrial projects which require significant amounts of labor with specialized skills tend to rely solely on union workers. However, much of the secondary construction work involving housing, small retail, and service establishments is likely to be done by nonunion workers. Thus, in most cases there would be little competition for workers between the steel plant and residential/commercial construction activities.

The applicant's capital requirements would not affect the sources of funds for private and public secondary construction. The most likely sources of financing would include internal cash flow and retained earnings, equity issues, and major commercial banks in the nation's financial centers. Financing for secondary construction is most likely to come from local banks and thrift institutions (and, if large developers are involved, larger banks in places such as Cleveland and Pittsburgh), mortgage brokers, and, for public facilities, municipal bonds sold to private and institutional investors. Moreover, the investment of capital can hardly be considered an irretrievable commitment of resources. Money spent for materials and labor to build the plant flows into savings banks, insurance companies, pension funds, etc. and can be reinvested. Even though the applincat's capital requirements are huge, they would not affect the availability of financing for secondary construction; in fact, capital availability would increase in the Regional Study Area if the proposed plant were constructed.

Comment DW-16:

Because of the employment increases in the regional study area more people will enter the area looking for work. This migration of workers and their families will basically keep the unemployment rate at its presently projected rate without the proposed steel mill. The estimated unemployment rate for 1990 without the steel mill is 5.3%, with the steel mill 5.2%.

Response DW-16:

The 1990 unemployment rate in the Regional Study Area would decline from a baseline estimate of 5.3 percent to 4.6 percent with the impact of the proposed plant. Even with the in-migration of workers and their families and the expected increase in the local labor force, there are expected to be about 1,100 fewer people unemployed under the impact case.

Comment DW-17:

The effects of SO_2 emissions on crops is harmful. Here is a quote from testimony of Wayne T. Williams on behalf of Citizens for a Better Environment in the Potential Bioenvironmental Impacts from the Proposed PG & E Coal-fire Plant in the Sacramento Valley at a hearing held at Solano Community College, Fairfield, California, June 27, 1978 -

"Sulfur Pollutant Doses Necessary to Cause Crop Yield Losses"

"California Air Resources Board staff recently reviewed the world literature on the effects of SO_2 on vegetation and ecosystems. That evidence indicated that many species of plants have been significantly damaged by SO_2 alone or in combination with a number of other common air pollutants. Plant species sensitive to SO_2 at doses as low as 0.05 parts per million for 4 hours include alfalfa, soybeans, ryegrass, radishes, lichens, peas, oats, pinto beans, and spinach, all California species. At doses as low as 0.15 ppm for several hours, a much broader spectrum of sensitive plants appears, including tomatoes, broccoli, cabbage, and a number of forest tree special including sycamore and white pines. At yet higher doses, hundreds of plant

species have been demonstrated to be sensitive to sulfur dioxide pollution. The degrees of risk to SO_2 is medium to very severe for legumes, sugar beets, members of the sunflower family, meadows and pastures, seed fruits, berries, walnuts, grapes, evergreen forests and woods, and a variety of ornamentals. The CARB staff recommend a secondary standard to protect vegetation of 0.05 ppm for four hours at the public hearings of May, 1977, and emphasized that this dose would not be protective to all plant species, especially the ecologically important lichens."

Response DW-17:

While Corps staff has not reviewed the cited report, our literature review indicates that the sensitivity to SO_2 at doses as low as 0.05 ppm for species such as alfalfa may be misquoted and should probably be 0.5 ppm or 1,400 ug/m^3 over a four hour period. A study prepared by Yopp, et. al, 1974. (Illinois Institute for Environmental Quality) indicates that alfalfa is the most senitive to SO_2 of the broad-leaf dicots with injury occurring at 0.5 ppm (1,400 ug/m^3) after exposure for a four hour period. The study, based on phytotoxic effects of SO_2, recommended an eight-hour standard of 925 ug/m^3 (0.35 ppm), and a one-hour standard of 2,400 ug/m^3 (0.92 ppm) and an annual of 0.03 ppm or 80 ug/m^3. The Illinois study considered three types of effects prior to making recommendations: acute injury, chronic injury, and physiological injury. Studies by the National Environmental Research Center, 1973 indicate that for visible injury, the four-hour concentration ranges from 262 to 2,620 ug/m^3 depending on the species.

A literature review by Donald O. Davis, and Raymond G. Wilhour (EPA - 600/3-76-102), September 1978 reported that one hour values of 1.25 ppm SO_2 were needed to injure alfalfa. All of the studies reviewed by Corps staff seem to indicate that of all plants studied, certain conifers such as white pine are the most sensitive to SO_2. White pine was used in the draft EIS as an indicator of potential worst case impact from plant emissions of SO_2. Finally, it is not within the scope of this EIS to recommend air quality standards, since it is recognized that the expertise, regulatory authority, and legislative mandates for air quality matters are within the purview of the USEPA.

Comment DW-18:

Refer to CRG-37

Comment DW-19:

Because of the air currents (daytime winds blowing from lake onto land; nightime these winds reverse creating a sort of tube of air) the prevalent South easterly winds will blow any air emission along the shoreline. This will cause a "cloud" to settle along the coast including Presque Isle and the City of Erie. This "cloud" could be invisible because large quantities of particulates should be removed, but still gases will be in the air.

Response DW-19:

The prevailing winds in the Conneaut area are south and west and will generally blow the pollutants out over Lake Erie. The maximum projected impacts on Presque Isle and the city of Erie were determined and were found to be extremely small. Chapter Four of the EIS indicates that in the city of Erie the maximum 24-hour suspended particulate (TSP) increment, based on modeling an entire year of hourly meteorological data, occurred on Julian day 163 and was two micrograms per cubic meter. The level is near the minimum detection limit of a hi-vol monitor and is less than the value considered significant by the USEPA. This calculated amount should be considered as the upper limit, since no depletion was considered due to gravitational settling. Also the same high wind persistence was assumed to occur over the entire advective distance from Conneaut to Erie. This assumption would lead to an overestimate of impacts.

The projected maximum 24-hour average impact of sulfur dioxide on the city of Erie was also determined to be low (three micrograms per cubic meter), which is an insignificant level by USEPA standards.

Comment DW-20:

Refer to DOC-12

Comment DW-21:

5. Contamination of waterfowl and migratory birds who will land in holding ponds for chemicals and untreated water or in the warmer water discharge areas where concentrations of pollutants is very high.

Comment RB-3:

Major changes in the aquatic environment could severely alter the ecological conditions on Presque Isle State Park; a peninsula designated by the Federal Government as a registered national landmark which juts out several miles into Lake Erie approximately 20 miles east of the construction site. The park is noted as one of the largest bird sanctuaries on the Great Lakes. Hundreds of thousands of birds stop at the park along their annual migration routes, while thousands more nest on the park during the summer. Some of these species of birds include fish in their diet, and virtually all of the birds use the lake as a water supply. Bird populations would be affected by a deterioration of the quality of the water, not to mention the possible affect on human life in the area.

Response DW-21, RB-3:

Water quality in the vicinity of Presque Isle State Park is not expected to be measurably effected by the proposed plant's effluent discharge. Although discharge constituents will naturally occur within the water column near Presque Isle, concentrations are not expected to exceed baseline (existing) levels. Therefore wildlife populations should not be adversely impacted. However, it is acknowledged that adverse impacts would occur if birds use wastewater holding ponds.

Comment DW-22:

Refer to CAN-6

Comment DW-23:

Refer to A-7

Comment DW-24:

8. All air and water emissions are only projected figures and cannot be verified until after the plant is operational. Given the history of EPA and Federal agencies vs. U.S. Steel we can not be sure that U.S. Steel will abide by Federal standards. U.S. Steel's attitude toward pollution has been characterized on February 5, 1975 by John R. Quarles, the deputy administrator of EPA as "a record of environmental recalcitrance which is second to none." If they do not meet Federal requirements there is little the Federal agencies can do to stop the pollution.

Response DW-24:

The allowable air and water emissions will be specified in the National Pollutant Discharge Elimination System permit, new source performance standards and prevention of significant air quality deterioration permits, and will be further controlled by water quality standards and ambient air quality standards. The state-of-the-art modeling techniques used to predict the emissions and discharges are used as guidelines to determine if limitations will be met, but are not used to set the standards and limitations. In regard to meeting air quality standards, the USEPA has full authority to enforce its own permits as well as the air pollution control rules of both Ohio and Pennsylvania. The USEPA can take civil and criminal actions against a violator of air quality. A discharger which violates its NPDES permit can also be prosecuted by either State or Federal authorities. The very criteria, guidelines, and standards that are being used to develop Best Available Control Technology (BACT) for air emission limitations and Best Available Demonstrated Technology for effluent limitations for the proposed facility were established to eliminate the unacceptable practices which have occurred in the steel manufacturing industry during the past few decades. The use of modern control technology coupled with constant monitoring and enforcement by Federal and State regulatory agencies should assure that serious air and water pollution problems do not occur.

Comment DW-25:

Racial problems in rural areas will be a problem as large amounts of minority workers and their families will be moving into the area, since these areas are almost homogeneously white.

Response DW-25:

There is little reason to believe that new residents would be significantly different from existing residents in their social characteristics and values. The document, "Industrial Invasion of Nonmetropolitan America" (Summers, Evans, Clemente, Beck, and Minhoff; Praeger Publishers; 1976), indicates that the majority of workers who in-migrate to areas experiencing industrial development move relatively short distances. In-migrants from nearby areas may be very similar to existing Regional Study area residents.

The applicant has also indicated that the overall population increase in the Regional Study Area would be approximately 15,800 persons. Non-white persons account for about 13 percent of the population nationally, and about 10 percent of the Ohio and Pennsylvania population. Thus, it is reasonable to assume that 10 to 13 percent of the new population would be non-white. The applicant believes that the in-migration of 1,600 to 2,000 minority group members into an area of several hundred thousand residents would not cause racial problems, even if the area currently contains few minority groups. The Regional Study Area itself is far from homogeneous, encompassing urban areas such as Erie and Ashtabula City, suburban communities such as Millcreek, and relatively rural areas such as Springfield, Saybrook, and others. This diversity of communities and life-styles would probably be able to accommodate the customs and preferences of new residents.

Comment DW-26:

Refer to ADM-1

Comment DW-27:

The proposed steel plant will be the most automated plant in the world, thus reducing the labor needed drastically. A capital investment of such magnitude in other industries and manufacturing processes would generate considerable more jobs.

Response DW-27:

While it is undoubtedly true that a $3.5 billion investment in another industry or manufacturing process would create more jobs, this has little bearing on the proposed project. Capital investments are not made solely to create jobs, and permanent productive jobs are not created in unprofitable businesses.

The proposed plant would employ all of the latest steelmaking technology available, including many computerized and automated operations. In order to compete in national markets, the steel industry must reduce costs per unit of output by using less labor, energy, and other inputs. However, this is not unique to the proposed project or to the steel industry. The history of the U. S. manufacturing sector has been increasing labor productivity which has in turn supported increases in the standard of living. New capital investments in all industries are designed to decrease unit labor requirements whenever possible. Thus, while steel is a relatively capital-intensive industry the practice of reducing labor requirements through automation would be likely to occur in any industry.

Comment DW-28:

Refer to A-4

Comment DW-29:

1. The review period is too short, and an extension of 90 days is necessary. This action is warranted by a number of facts. Several key governing agencies have asked for an extension: Mayor Louis Tullio of the city of Erie; Robbie Robinson, the Erie County Executive; the Erie County Council and the Northwest Future Committee, a planning board specifically set up to deal with impacts of the steel mill. These agencies acknowledge the sheer bulk of the document and the absolute necessity of carefully examining its content. These agencies, which have the necessary manpower and expertise to evaluate the document, thought it best to request more time. Since the plant could have serious consequences for the residents of this area, these residents must have plenty of time to study this document. These people seldom have large blocks to time to devote to Draft EIS; therefore, more time will be needed. There will also be comments from Federal and State agencies made either just before the deadline or right after it. Those statements made just before will not be adequately examined by those concerned before the review period ends, and those comments made after the deadline do not have to be made public. This late information is necessary for the general public and local agencies to adequately assess the impacts of the steel mill. Since we, as residents of the affected region, must live with the consequences of this mill, it is essential that all information concerning the plant be adequately studied.

Response DW-29:

On 23 May 1978, the draft Environmental Impact Statement was distributed to Federal, State, and local agencies, as well as the general public. The cover letter and notice of availability accompanying this document indicated that all comments were to be submitted no later than 8 September 1978. Overall, the time alloted for review was 90 days with 18 additional days for shipping and handling.

The review period for draft EIS is normally 45 days as defined in Corps of Engineers Regulations and Council on Environmental Quality guidelines. However, in December 1977, we received requests from several environmental groups to extend the draft EIS review period, so that the public would have a chance to thoroughly review this document. In consideration of the size of the EIS and the overall complexity of the action involved, we agreed to increase the review period to 90 days.

At the same time, steps were taken to insure that the public would have full access to all of the technical data used during the preparation of the draft EIS. In August 1977, general information files were established in the reference sections of public libraries in Erie, PA, and Conneaut, OH, as well as the Corps of Engineers office in Cleveland. These files were continually updated as new information was received from the applicant and the interagency technical team. Periodic news releases were also distributed to the media advising them of the location and content of the permit file.

During July and August of 1978, we were again approached to extend the EIS review period by 30-60 days. After careful consideration, we rejected those requests, since the public had access to the project file for more than one year and the EIS review period had already been increased from 45 to 90 days.

Comment DW-30:

Refer to COR-9

Comment DW-31:

3. Some of the graphs and plates were unreadable, according to Harry Scheele, Acting Chief of Interagency Archeology.

Comment PHCOE-24:

"...some of the graphs and plates used were unreadable, according to Henry Shield, Acting Chief of Interagency Archeology."

Response DW-31, PHCOE-24:

The Corps staff concurs that some of the tables and figures contained in the draft EIS were unreadable due to variations in the printing process. We have taken the necessary steps to correct this situation.

Comment DW-32, PHCOE-25:

Air temperature sampling was done in Buffalo instead of at Conneaut. And I have no idea how the air temperature in Buffalo has any bearing at all on the air temperature of Conneaut.

Response DW-32, PHCOE-25:

Temperature readings from the Buffalo area were not used as a basis for the analysis of air quality impacts. However, radiosonde records from the Buffalo area were utilized.

Radiosonde data are collected by a small transmitter that is usually carried aloft by an unmanned balloon. Through the use of precise tone-signals or some equivalent method humidity, temperature, and pressure as well as other data are broadcasted to a ground station, every few seconds. From this information a vertical temperature profile can be established which in turn is used to determine the height of the atmospheric boundary layer (mixing height).

The nearest lakeshore station that records radiosonde data is located at the Buffalo International Airport. This particular station has been utilized in the past by the U.S. Environmental Protection Agency for air quality analysis involving projects on Lake Erie. As such it was considered to be an acceptable source of information for determining a reasonable profile of conditions at Conneaut. The use of the Buffalo radiosonde data was agreed upon by the USEPA and the State regulatory agencies.

Comment DW-33 PHCOE-26:

Unemployment figures were taken from local labor boards instead of local employment boards.

Response DW-33, PHCOE-26:

Data supplied by the State Employment Security agencies or local employment boards could have been used in the construction analysis, but were judged to be inadequate in two respects. First, these data usually reflect aggregate unemployment in the construction industry and in some cases are based on the number of works receiving unemployment compensation. They would therefore not be a valid indicator of unemployment by construction labor skill category. Secondly, since the proposed construction project spans two States and is likely to draw substantial numbers of workers from both of these States, the process of using aggregate data supplied by any one State would confuse the issue.

Comment DW-34:

Refer to CAM-4

Comment DW-35:

Refer to ADN-3

Comment DW-36:

Refer to CWP-6

Comment DW-37:

Alternative sites and technologies are not fully investigated; only two pages are given to this consideration. Such an important detail seems worthy of more input and conclusions, since the construction of this facility will completely change the present character of the impacted area. The Corps and the EPA only looked at sites which U.S. Steel owns. Why can't U.S. Steel buy land to develop a new plant? A quote from a Pa. publication "Identification of Critical Issues & Concerns..." helps to clarify this point. "A review of this chapter (6) indicates that U.S. Steel does not consider any of the alternative, even remotely, to be economically or operationally viable." Reference is made to a statement found in Chapter One, pp. 1-36, which states "...(the Lakefront plant site) is so ideal, that it is essentially impossible to select a viable alternative site for the proposed plant." The frankness of such a statement renders virtually useless the effort expended in preparing Chapter Six.

Comment PHCOE-29:

"...Chapter One, page 1-36..."The lakefront plant site is so ideal that it is essentially impossible to select a viable alternati ~ site for the proposed plant."

Response DW-37, PHCOE-29:

The Corps staff secured the services of a consulting firm to objectively analyze the alternative plant sites suggested by the applicant and to identify and evaluate other potential brownfield and greenfield sites within the market area of the proposed Lakefront plant. The results of this investigation have been incorporated into Chapter Six of this Final Environmental Impact Statement.

Both comments make reference to a statement which is supposedly found on page 1-36 of the Draft EIS. However, the page cited actually contains a figure which illustrates the various operations involved in a single coking cycle.

Since the citation was in error Chapter One of the draft EIS was carefully reviewed and only one sentence vaguely similar to the above quote was found. This sentence reads as follows:

"The land presently owned by the U.S. Steel Corporation to the east of Conneaut Harbor, OH, is considered by the applicant to meet these conditions (i.e. those listed previously) and be a prime site for a new steel mill."

The sentence was included in the draft EIS, solely for the purpose of indicating the applicant's point of view with regard to site selection. This statement should not be construed as the official position of the Corps of Engineers. The Corps staff is committed to reviewing this proposal in an objective and unbiased manner thus, statements such as the one identified in the above comment would be totally inappropriate and inconsistent with agency policy.

Comment DW-38, PHCOE-30:

The State and national impacts of the proposed steel mill were not covered at all. A facility of this size must certainly have effects on the national and State economies.

Comment TM-1:

I say "could be" because I see no mention of "Statewide Employment Impacts" in the draft summary copy of your Environmental Impact Statement. If the "greenfield" plant in Conneaut should serve to reduce the operations of plants in other parts of Pennsylvania, particularly in Pittsburgh, and if that reduction should cause unemployment locally, then I would oppose the Commonwealth's support of the plant.

I am, therefore, requesting that the environmental proposal be broadened to include Statewide economic impacts.

I must remind you that this suggestion has already been made in Part Three of a critique of the Corps of Engineers Study by the Governor's Office of State Planning and Development, calling your draft proposal "deficient in providing information concerning the economic impacts from a wider perspective," and, further, by stating that "it is reasonable to assume that the start-up of lakefront operations could coincide with correlating reductions elsewhere in the applicant's corporate structure."

I am also disturbed by the environmental concerns raised in that study and would encourage the Corps of Engineers to address those issues in the final version of the Economic Impact Statement.

Comment WJB-3:

What of the secondary impact which will be caused by the phasing out of production in the Pittsburgh area? What is to happen to the work force in Pittsburgh at the present U.S. Steel production plants? Although U.S. Steel doesn't want to discuss this, it will be a serious impact which must be addressed. The proposed mill will replace present operations. Is Pittsburgh to become a ghost community so that a new "Pittsburgh" with all its problems can be created in Conneaut, Ohio.

Response DW-38, PHCOE-30, TM-1, WJB-3:

The applicant has stated that the proposed project would have no adverse impacts on their other facilities and in fact may have positive impacts on steel-related industries outside the Regional Study Area. The proposed plant would be built to meet projected demand increases and not to replace existing mills. Thus, the proposed Lakefront mill is not expected to cause reduction of steelmaking employment in other parts of the State.

Specifically, the applicant's cold reduction mills in Pittsburgh, Pennsylvania, can produce more product than can be supported by the hot strip mill capacity which exists in the area. One of the purposes of the proposed plant is to ship hot mill product to the Pittsburgh plant at Irvin to permit higher utilization of these facilities. Hot mill product also would be shipped to Gary, Indiana, to improve the utilization of the cold mill operations located there. The new mill would improve the operations of sister plants rather than harm them.

With respect to Youngstown, there is no overlap of product to be produced at the proposed plant. The strip produced on the McDonald No. 18-43-inch mill is narrow in width and aimed at high and low carbon steel specialty applications, whereas the strip on the new mill is wide product aimed at large volume markets such as the automotive and capital goods industry. Small tonnages of plates produced at McDonald Works are actually made on the strip mill and would not be produced at the new Lakefront plant mill. The future of Youngstown is tied to environmental standards which may not be economically feasible, the demand for the specific product to be produced by these facilities, and the profitability of the operation relative to the investments required. The existence of the proposed Lakefront plant would have little influence on such profitability analyses.

In addition, data on purchases of three operating facilities owned by the applicant (Gary, IN; Youngstown and Lorain, OH) indicate that 36 percent to 77 percent of total

purchases are made from establishments located in Pennsylvania and Ohio. These same established suppliers are expected to serve the proposed Lakefront plant, probably increasing employment along with sales.

Comment DW-39:

There is not enough information and conclusions drawn about different technologies and methods. A pelletization of coke was summarily dismissed. In Environmental Steel, James Cannon states: "U. S. Steel recently received a six million-dollar grant from the Department of the Interior to conduct a project of its own into a coke-forming process similar to pelletizing. The program will run three years, culminating in the construction of a small pilot plant." (p. 86). This information leads to an interesting assumption--U. S. Steel should be a leader in coke pelletizing or similar technology, yet they choose not to incorporate that technology into their new plant.

Comment PHCOE-31:

"...pelletization of coke was summarily dismissed."

Response DW-39, PHCOE-31:

The comment concerns the 1974 publication "Environmental Steel" by J.S. Cannon, page 86, which references a 1972 publication "Report on the Progress to Develop Processes of Pelletizing Coke" by Group Against Smog and Pollution. This organization had previously reported on the award of a contract to U.S. Steel by the Office of Coal Research of the U.S. Department of the Interior. That particular contract covered a cost sharing agreement between the U.S. Steel Corporation and the U.S. Department of the Interior to develop the applicant's "Clean Coke Process" to the pilot plant stage. The development phase of the program is still proceeding and further progress will be dependent upon the technical and economic results that will be demonstrated. However, conclusive results on the feasibility of the pilot plant process would not be available until after the proposed Lakefront plant is expected to be in operation. Even if the results were positive, it would take a considerable amount of time to design and perfect a large scale facility capable of meeting the production demands of the Lakefront plant. The time frame required is too variable and does not coincide with the anticipated construction schedule for this facility. Coke pelletization has been studied by many investigators for a number of years. However, none of these studies have shown that the coke produced would have all of the desirable qualities required for use in the blast furnace. The U.S. Steel investigation, has progressed from process research to operation of a small scale pilot plant which has run for several months. The amount of material produced at maximum throughput was 500 pounds per day. Analysis of the coke by a wide variety of testing procedures showed encouraging results.

Funding for the next stage of the investigation, a demonstration plant, is currently being discussed. This larger facility would be needed to produce enough pelletized coke for use in a blast furance test run. Should this portion of investigation receive immediate sponsored funding, at least another six years would probably be required to complete this stage of the program.

Comment DW-40:

There is technology available for "any quenching" of the coke. Appreciable pollution occurs during wet quenching, where steam laden with pollutants escapes into the air. (Environmental Steel, p. 85.)

Comment PHCOE-32:

"There is technology available for dry quenching of the coke."

Response DW-40, PHCOE-32:

The rapid quenching of incadescent coke is needed to achieve ambient temperature and effect safe handling.

Dry quenching has been discussed in several publications dating back to 1970 and earlier and the process itself has been studied by several steel companies. Neither these data nor the applicant's own evaluation justify the use of the dry quenching process at the Lakefront plant.

The applicable Lowest Achievable Emission Rate (LAER) limitation for the Lakefront Plant indicates that the dry process for coke quenching is environmentally acceptable. Utilizing past experience the applicant believes that the LAER emission limitation can be attained through the wet quenching process. The reviewer is reminded that the USEPA standards of compliance in this particular case are based on the use of the dry process technology.

At the present time, the advantages and disadvantages of dry quenching are such that the U. S. Steel Corporation prefers to use the time-tested method of conventional wet quenching. If dry quenching were substituted for the proposed process there would be no advantage regarding the amount of particulates escaping to the atmosphere.

Comment DW-41:

Refer to A-11

Comment DW-42:

Refer to CRG-21

Comment DW-43:

The biological breakdown of both cyanide and phenol is not even considered. Yet "special strains of bacteria can thrive on these two pollutants and quickly convert them to harmless carbon dioxide and water...Bethlehem Steel Company advertises a 'bacteria cafeteria' at the Bethlehem, Pa., mill which is capable of 99.9 percent removal of phenol and cyanide." (Environmental Steel, p. 108.)

Response DW-43:

The coke oven gas treatment in the coal chemicals by-product plant is described in Chapter One of this final EIS. Process wastewater containing residual phenol, cyanide, and other pollutants would be sent to the coke plant wastewater-treatment system. This system will include a biological oxidation treatment system designed to remove ammonia, phenols, cyanide, oil and grease, sulfide and sulfur compounds, and other dissolved organic matter.

Biological treatment at the proposed plant would be patterned after full-scale systems that U.S. Steel has installed at Clairton Works in Pennsylvania and Fairfield Works in Alabama. The statement that the Bethlehem Steel plant at Bethlehem, Pennsylvania, is capable of 99.9 percent removal of phenol and cyanide is illustrative of the stage of technical development when that plant was built. In many ways, it is improper to compare the modern U.S. Steel facilities to the Bethlehem plant, one of the first built in the United States. Removal of phenol at U.S. Steel's existing facilities is well over 99.9 percent. Removal of the toxic variety of cyanides is, for practical purposes, 100 percent. The applicant believes that this represents the best available technology under existing all existing guidelines.

Comment DW-44:

Any trade offs in the air basin concerning SO_2 and ozone emissions must be made specific. If these are not formulated, no permits should be issued.

Response DW-44:

The Corps of Engineers regulatory permit authority is restricted to the proposed construction of the unloading pier, harbor dredging, installation of intake and discharge structures, and modification of Turkey Creek. However, enforcement of air quality standards is wholly within the authority of the U.S. Environmental Protection Agency and the appropriate counterpart State agencies.

At the present time the applicant has not made application to the U.S. Environmental Protection Agency for the appropriate air quality permits, thus, no offset policies have been identified. The USEPA has indicated that offsets would be required for non-methane hydrocarbon emissions to insure attainment of air quality standards for ozone.

The USEPA has also indicated that the proposed plant would not require offsets for sulfur dioxide and particulate emissions since the project site has not been classified as a non-attainment area for these constituents. However, plant emissions would be controlled through the application of Lowest Achievable Emission Rate (LAER) and Best Available Control Technology (BACT) criteria.

The Corps of Engineers cannot withold a decision of this Department of Army permit application pending the outcome of other future regulatory authorizations. However, the USEPA has advised that it will not allow plant construction or operation to proceed until such time as they are satisfied that the applicable air quality standards can be met.

Comment DW-45:

None of the environmental impacts were weighed in conjunction with the proposed Penelec coke power plant. The proximity of the two plants makes mutual consideration a necessity.

Response DW-45:

A new section entitled "Combined Impact of the Proposed Steelmaking Facility and Proposed Coho Generating Station on Air Quality," has been added to Chapter Four of this final EIS. This discussion considers the effects that these two proposed facilities may have on (PSD) class increments, specifically the allowable PSD sulfur dioxide Class II increments. The initial review of combined impacts singled out the SO_2 increment as the primary concern. When the applicant applies to the USEPA for a permit under the PSD regulations, more extensive analysis may be required for both total suspended particulate (TSP) and SO_2 impacts of all existing sources and new sources which either consume or expand the PSD, TSP, and SO_2 impacts of air quality class increments. Similarly cumulative impacts resulting from the plant effluent should be addressed during the NPDES permit review process.

Comment E-1:

We are assuming that the State and Federal regulatory agencies will not issue any permits allowing variances from the established air and water pollution standards.

Response E-1:

Regulatory agency personnel have stated on a number of occassions that construction and operation of the proposed Lakefront Plant would be contingent upon compliance with all regulatory criteria, guidelines, and standards.

Comment E-2:

Refer to ADN-1

Comment E-3:

Refer to A-9

Comment E-4:

Refer to CWP-6

Comment E-5:

Refer to ADN-3

Comment E-6:

Refer to A-9

Comment E-7:

We strongly suggest that the intake for the Plant be located east of the outfall. Since communities in Pennsylvania will be affected by the discharges, both the intake and the outfall should be located in Pennsylvania allowing us better control over their operation. The organics (chlorinated and nonchlorinated) must be added to the list of pollutants that need to be monitored daily.

Response E-7:

The principal consideration in location of the discharge structure to the east of the intake is to avoid recirculation of heated discharge water to the intake. If the intake were located to the east, the recirculation of heated water would result in an overall increase in the discharge temperature. This alternative action would also increase losses of plankton and possibly attract fish to the intake structure. Both the Ohio and Pennsylvania Lake Erie water quality standards are based on high quality water use classifications. The discharge permits (NPDES) are required to be conditioned for compliance with these water quality standards. While Ohio EPA operates the NPDES permit program, review and veto authority rests with the USEPA to insure protection of water quality. The Corps has been advised by the USEPA that Ohio EPA will submit a draft proposed permit to the State of Pennsylvania for comments. Comments and recommendations resulting from the State and from the USEPA region with authority in Pennsylvania (Region III) will be submitted to Ohio EPA and Region V USEPA for consideration in drafting the final NPDES program. Should the USEPA find that the NPDES permit does not adequately protect the State of Pennsylvania waters, they have the option to formally object to the issuance of the permit and could veto any permit that is issued. The list of pollutants to be monitored will be determined at a later date during the NPDES permitting process.

Comment E-8:

Refer to CWP-6

Comment ECFA-1:

In surveying our membership we find the same concerns expressed again and again. Our members are worried about air pollution damage, from both primary and secondary emissions, and all the various potential combinations thereof. Air pollution and agriculture simply are not compatible entities. All of the air pollutants mentioned in the E.I.S. are harmful, in varying degrees, to one agricultural crop or another. Ozone in particular appears to be a problem without a solution in the E.I.S., especially if the population estimates are low, as we feel they may be. "Offsets" have been mentioned as a policy for reducing ozone in our air basin, but as yet we have seen no explicit plan for this offset policy. We feel that if there is such a plan, it should have been detailed in the E.I.S.

Response ECFA-1:

At this point in time, an explicit plan for the offset policy has not been formulated since the applicant has not yet applied for any Air Quality permits. These offsets will have to be acquired by the applicant, the State of Ohio, and/or the Commonwealth of Pennsylvania, and be approved by the USEPA. The prevention of Significant Air Quality Deterioration regulations of 19 June 1978, require an assessment of the impact of emissions on soils and vegetation during the preconstruction PSD review if, during that review, the USEPA determines there is a likelihood of adverse effects on the commercial value of crops. Compliance with PSD permit conditions and all applicable air quality standards and regulations should assure reasonable protection to agricultural resources.

Comment ECFA-2:

Acid rainfall is another area of concern. The effect that sulfuric acid rain could have on crops and vegetation in general has not been, and perhaps cannot be, fully investigated. The potential for damage is enormous. Sulphur dioxide can cause injury to leaves of growing plants. Injury has been classified into two types - acute or chronic. Acute injury is caused by high concentrations of sulphur dioxide in a relatively short time. Chronic injury is caused by a long time absorption of sulphur dioxide at sub-lethal concentratios. When sulphate accumulates beyond the level that the plant can tolerate, chronic injury occurs.

Acute injury can occur within an area from a single source or many sources such as homes, office buildings, industry and power plants, one of which is proposed for this area. Factors which favor injury are high relative humidity (70%), warm air temperature (40 degrees) and a steady wind in a given direction, factors which our area has. Acute injury to vegetaion could develop during anticyclonic conditions with high pressure, heavy air, low wind speeds and a temperature inversion allowing pollutants to build up.

An important consideration is the effect of the Lake Erie shoreline on local winds. Near the lake shore recirculation can occur and high concentrations of contaminants may build up during a period of several days in a recirculating air mass. Each area has its own microclimatology. Flow patterns at a weather station a few miles away may not be the same as at the damage site. Plants and trees vary in susceptibility to both chronic and acute damages. Alfalfa is the recognized plant most sensitive to sulphur dioxide. This is an important forage crop in cattle feedings in Erie county.

Response ECFA-2:

In order to test the relationship of meteorological conditions at the site compared with Erie Airport, hourly data from both stations were simultaneously recorded for 15 months. A statistical analysis of the data indicated that the assumptions made were valid. The correlation coefficient for wind direction was 0.86, and the wind speed correlation coefficient was 0.95, where 1.0 is perfect correlation. This implies that on a mesoscale basis the same meteorological parameters will apply along the length of the nearby coastal regime. Since the modeling analysis utilizes mesoscale meteorology, it can be assumed that parameters at the site also apply to more distant locations.

Comment ECFA-3:

The primary impacts from the plant could be sufficient to seriously endanger agriculture in Erie County, especially in the fertile lake plain area of Western Erie County adjacent to the proposed mill. We are not encouraged by the U.S. Steel's past history of environmental degradation in many of its other locations. From all indications their environmental policy seems to be to wage war on the environmentalists, rather than on pollution. U.S. Steel would have the potential, in the proposed facility, for enormous destruction to agriculture, and for that matter to life in general in our area, in the day to day operation of the proposed mill. Any pollution control breakdown, any shutdown of pollution control devices for one reason or another, any failure of the company to comply with a shutdown order from the regulatory agencies, could be disasterous for agriculture. We have heard a lot of talk from U.S. Steel officials that they would be good neighbors. We have neither the financial resources nor the time, at this point, to do our own E.I.S. on the primary effects of the proposed facility on agriculture. We can say with assurance however, that from the standpoint of producing agricultural commodities, we can find nothing but bad news for agriculture among primary impacts covered in the E.I.S.

Response ECFA-3

The projected regional increments of SO_2, SO_4, particulates and NO_2, when added to projected background concentrations, are below the reported threshold levels for observable acute injury to vegetation. In addition, the projected one-hour maximum ozone concentration of 0.185 ppm is below the level that has produced injury symptoms in beans, 0.25 ppm for four hours (Davis, 1974, Vol. 58, No. 1, Plant Disease Reporter). Work recently reported by the Texas Air Conrol Board (Environment Reporter, pages 832 and 833, 1 September 1978) suggests that another species of oxidant detected in experimental situations is responsible for reported damage in laboratory experiments at levels below 0.25 ppm. The Board states that "these findings largely explain the discrepancy between expe-imental chamber exposure data which appear to show measurable biological effects at around 0.15 ppm and real-world epidemiological data which show no effects below ozone concentrations of 0.25 ppm, even in sensitive individuals." Although injury symptoms have been observed in poplars exposed to 353 ug/m^3 ozone for four hours, (Kohut, 1976, Vol. 60, No. 9, Plant Disease Reporter) the 350 ug/m^3 ozone concentration reported in 1977 baseline monitoring on the proposed site is not expected to increase due to the plants operation, because ozone formation is a phenomenon requiring several hours to occur, and an overall decrease in the multi-state region is expected to result from the required emissions offset by hydrocarbons.

The USEPA, on receipt on the applicant's Prevention of Significant Air Quality Deterioration permit application, will review the air quality aspects of the proposed facility's operations to ensure compliance with all standards and to determine the appropriate controls necessary to meet them. These standards were specifically promulgated for the protection of public health and welfare from any known or anticipated

adverse effects associated with the presence of air pollutants in the ambient air. Each State has the authority to enforce air quality standards and rules within its own boundaries. However the USEPA can take direct action when a State fails to require compliance with the rules. The USEPA has authority to enforce its own permits as well as the Air Pollution Control Rules of both Ohio and Pennsylvania, and can institute civil and criminal actions. Should it be deemed necessary, voluntary cutbacks in operations can be requested if air pollution alert levels are reached. If cutbacks do not occur or air quality deteriorates further, requests for cutbacks are fully enforceable. Equipment failure which causes pollution can be stopped by shutting down the process equipment.

Comment ECFA-4:

Troublesome as the primary impacts from the proposed mill may be, the secondary impacts are probably worse for agriculture, especially in the local area in Western Erie County. Here we have the case of a giant industrial complex, one of the largest, or perhaps the largest, integrated steel-producing facilities in the world, being plunked in the middle of a garden. Make no mistake about it, the local area along Lake Erie is a garden, worked for the most part by small, independent farmers, the same kind of people who made the United States known as the "breadbasket of the world." The garden, especially the fertile lake plain area, because of a combination of factors which can be readily ascertained by any willing to inquire, is one of the finest agricultural areas in the United States. This is one of the very few areas able to produce quality Concord grapes. The Chautauqua Erie grape belt is the largest Concord grape-producing area. We have proper conditions for and do have very extensive plantings of nursery stock. Some varieties of nursery stock are very sensitive to air contaminants. This area produces fruits and vegetables with quality and flavor unmatched by other regions. If this was known to the A.D. Little Company and U.S. Steel, they gave little indication of it in their EIS. If it was not known to them, it could have been because they never asked anyone, or perhaps, because they didn't care. For example, the section listing acreages of various crops produced, one vegetable crop was listed incorrectly to the extent of approximately forty times obtained from Erie County. There are several other crops listed at figures which are misrepresented by huge percentages obtained from Erie County.

Response ECFA-4:

Corps staff concurs with the statement regarding the exceptional suitability of the lake plain area for agriculture. Section 2.489 of the draft EIS cites the reasons for this suitability and indicates that the combination of soils, topography, drainage, and moderating effects of Lake Erie on climate enables Erie County to maintain its reputation for unique fruit production capability. Section 2.735 indicates that grape production ranks first in Erie County, PA, with Concord the leading variety. The table referred to in the above comment (Table 2-389 in the draft EIS) was prepared from information supplied by the Pennsylvania Department of Agriculture and the U. S. Department of Agriculture. Comparison of Table 2-389 with the input from these agencies indicates that the figures reported are indeed accurate.

Comment EDH-1:

Refer to CCM-4

Comment EDH-2:

The DEIS indicates that under northeast wind conditions, currents and wave actions will cause the effluent to blow on shore. This gives us some pause for thought on this blooms effect on the near shore productivity area. The data collected by A.D. Little indicates that this shore area is highly productive and serves as a nursery area for many lake species of organisms, and we can see possible problems with the plume encroaching in these highly productive areas.

Response EDH-2:

Under the conditions cited in this comment, the effluent would be directed toward the shore. Corps staff feels that violations of water quality standards are projected to occur during both "typical" and worst case" conditions; thus, there would be reason for concern about the highly productive new shore zone during periods that the effluent is directed to the shore. However, the USEPA has advised the Corps that an NPDES permit cannot be issued when violations of water quality standards will result. This agency is requesting further reivew of the applicant's modelling techniques and has stated that the proposed effluent limitations and/or discharge port design must be altered to achieve existing water quality standards. Additionally, the applicant will provide equilizaiton lagoons to further reduce discharge concentrations. The proposed offshore distance of the discharge structure coupled with the achievement of water quality standards within a defined mixing zone should afford reasonable protection to the nearshore area. Further, the applicant has committed to implement a discharge monitoring program to be defined in the NPDES permitting process, and to maintain discharge quality that is acceptable to the USEPA. Thus, a mechanism exists for assuring realization of the projection of an absence of adverse impacts on the nearshore area.

Comment EDH-3:

It was also noted by the DEIS that during certain weather conditions, an eddy effect was created between the outfall and the presently existing breakwall structures associated with Conneaut Harbor. This eddying effect could possibly have the effect of concentrating constituents of the effluent and hence become toxic in the near shore areas.

Response EDH-3:

If the outfall were located in the vicinity of this eddy, it is possible various constituents present in the plant effluent could be concentrated. However, the discharge is we.. removed from the area that is under the influence of this eddy. Thus, there is little potential for the entrapment of pollutants. This assumption is based on current obervations by Aquatic Ecology Associates during 1977. The exact location of the outfall has not been decided as of yet. However, avoidance of the breakwall eddy is one of the factors which will be considered in that siting decision.

Comment EDH-4:

The data developed by A.D. Little on ichthyoplankton appears to be atypical of a typical near shore ichthyoplankton profile. This could possible be because 1977, when this work was done, had unusual weather conditions with respect to record rainfall. Also, the ichthyoplankton developed was somewhat limited in the area of the proposed intake and discharge structures.

Comment FWS-29:

(1) Paragraph 2.843 states that no ichthyoplankton were collected at Station LE4, but Table 2-422 shows eggs or larvae were collected there on five different dates in June and early July 1977.

Comment FWS-31:

(3) Table 2-423 contains data for nearshore Stations LE9, LE12, LE13, and LE15, but no such stations are shown on Figure 2-148 (page 2-1050).

Comment FWS-32:

(4) Data for nearshore Stations LE9 and LE10 appear in two different positions in Table 2-423.

Comment FWS-33:

(5) Table 2-422 contains no data whatsoever for 6 of 15 offshore Stations, namely LE7, LE8, LE9, LE10, LE12, and LE13.

Comment FWS-34:

(6) Data for nearshore stations are summarized in not one but three separate tables (2-0423, 2-424A, and 2-424B). Surface/bottom comparisons are given for some but not all stations and sampling dates. Day/night comparisons are given for some but not all sampling dates.

Comment FWS-35:

(7) Table 2-426 purports to show concentration (densities) of fish larvae in surface and bottom water at 15 offshore stations on several dates between mid-July and mid-August 1977. It is unclear whether each tabulate value represents results from a single collection or the lowest, highest or mean of more than one collection taken over a 1 - 12 day period. Therefore, it is impossible to use these data for comparisons between surface and bottom or among stations or dates.

Comment FWS-36:

Tables 2-422 to 2-427 give densities or numbers of ichthyoplankton and Tables 2-428A and 2-428B give species checklists. This information should be reorganized to show densities for each species (or higher taxa in the case of Cyprinidae or Catostomidae) at each sampling station on each sampling date. Without this information, a reader cannot determine what the entrainment impacts on ichthyoplankton are likely to be at the proposed intake location (LE9) or whether entrainment impacts would be less severe at some location other than the one now proposed.

Response EDH-4, FWS-29, FWS-31, FWS-32, FWS-33, FWS-34, FWS-35, FWS-36:

This section entitled Aquatic Biota in Chapter Two of this EIS has been totally revised in response to the above comments. Revisions include updated text, tables, and figures, all of which have been presented in a clear, easy-to-follow format. Supplement species and site specific data are included in Appendix D of this statement.

Comment EDH-5:

Refer to DOC-1

Comment EDH-6:

Refer to DOC-1

Comment EDH-7:

Refer to CON-10

Comment EDH-8:

Refer to CRG-29

COMMENT EDH-9:

Refer to DOC-1

Comment EDH-10:

The construction of these facilities would appear to have no lasting unavoidable adverse impacts in the Conneaut harbor area. We would have the following comments on this particular portion of the application.

Any activitiy that involves removal of lake bottom or placement of fill materials on the bottom will resuspend sediments located in the area of the construction. This suspension of materials could create hardship on the aquatic community in the area through reduction of light, turbidity, and suspended material clogging breathing apparatus of aquatic species. Due to the highly productive nature of the harbor area, the possibility exists for smothering of aquatic organisms.

Also to be considered is the blocking of migratory fish routes, as Conneaut harbor does act as the mouth of Conneaut Creek, which the DEIS points out, does support salmonoid migration.

Our recommendation to you would be to issue this portion of the permit with special conditions that would limit disruption of finfish activities, i.e., spawning and migration, and resuspension of sediments and any intrained organics in the bottom.

Comment EDH-12:

We would recommend to the Corps that this portion of the application be issued with conditions limiting disruption of finfish activities, resuspension of sediments and organics, and also proper disposal of dredge materials.

Response EDH-10, EDH-12:

If a Department of the Aray permit is issued for the proposed work, special time restrictions on work activity will be considered where appropriate in order to protect fish species during spawning and migration periods. If necessary, special conditions may also be imposed that would limit the resuspension of sediments and organics and assure the proper disposal of dredged materials.

For example, maintenance dredging associated with the Federal project in Conneaut Harbor is only conducted during the months of June, July, and August to avoid disruption of the area fishery. Similar restrictions could be placed upon the U. S. Steel Corporation if the Department of the Aray permit is granted.

Comment EDH-11:

Dredging activities in harbor areas are routinely carried out to keep channel ways clear for shipping activities. We have the following comments.

Dredging decreases transparency and light penetration in the water and also resuspends the bottom sediments. This activity could possibly create problems much the same as the pier construction and dock proposals outlined above.

Unlike the pier construction and docking facilities, dredging will have to be repeated at routine intervals to keep shipways clear. The DEIS did not address the accumulative effects of dredging activity.

Response EDH-11:

As indicated in paragraphs 4.682 and 4.683 of the EIS, maintenance dredging impacts would be greater than those impacts associated with initial construction. The Corps staff believes that physical alteration of the bottom substrate could have a significant effect upon utilization of the area by fish for spawning, feeding, and nursery purposes. However, if the geochemical environment is unaltered, it is believed that most contaminants would generally not be released into the water column from the individual sediment particles or, if released, they would be bond to suspended solids and be precipitated to the bottom. Although benthic organisms would be physically removed by the dredging process, rapid recolonization from adjacent unaffected areas would probably occur.

Corps research studies indicate that, except in unusually environmentally sensitive areas, turbidity is primarily a matter of asthetic rather than biological impact. However, where feasible, it is advisable to schedule dredging and disposal operations to avoid disrupting fish migrations and spawning activities. Turbidity impact caused by dredging are generally localized and of short duration.

The bottom sediments in Conneaut Harbor have been classified in the past as polluted and nonpolluted as testing requirements and the interpretation of testing results have changed. Procedures being developed under the guidelines for Section 404(b)(1)

of the Clean Water Act will probably be a determining factor with respect to future dredging and disposal activities conducted in Conneaut Harbor.

The reviewer is advised that long-term maintenance dredging is not a part of this Department of the Army permit application.

Comment EDH-12:

Refer to EDH-10

Comment EDH-13, EDH-14, EDH-15, EDH-16:

The DEIS indicates that overall the worth of Turkey Creek is not that significant to the aquatic environment, when one considers the overall study area. Perhaps the most interesting aspect of the stream itself is the fact that we received word that there was natural salmonoid reproduction noted in the Spring of 1978. This was not in the DEIS. Natural reproduction is limited in the study area due to the fact that most study area streams are generally not suitable for salmonoid reproduction. In the study area, the fishery for salmonoids is generally considered to be a put and take fishery and not dependent upon natural reproduction of the species involved. No estimates of the aquatic populations were made with respect to fish utilization of Turkey Creek. Therefore, we cannot comment on the significance of any loss of aquatic habitat.

Perhaps more important than the aquatic ecology of Turkey Creek is the terrestrial habitat that will be destroyed with the filling of the main stem of the stream. Of primary importance is the fact that this terrestrial area does support breeding grounds for woodcock; and if the proposal is allowed to continue, these breeding grounds will cease to exist. It should be noted that woodcock habitat is considered to be a transitory habitat. The habitat, unless maintained, might eventually become unavailable for woodcock breeding on its own. The proposal in the application would expedite and insure the demise of this habitat.

It would seem premature to issue a permit to rechannel Turkey Creek without knowing how the process would proceed. What methods will be used, sources of fill, time frame, handling of surface water, stream water, etc.? Which areas will be used as industrial fill, assuming that the Department of Environmental Resources' permits are approved? What will happen to water that accumulates in the streambed in the interim? It is one thing to say it will be filled in, but quite another to do so in an acceptable manner, assuming a permit was issued by the Corps and the Department of Environmental Resources. These are some questions we would think should be addressed in the Final EIS before a decision can be made.

This office has no specific recommendation for action on this portion of the application, other than to say that issuance or denial of the Turkey Creek portion of the application should be based on mitigative measures worked out with the agencies more directly involved in fish and wildlife management.

Comment PGC-23:

Paragraphs 1.334 through 1.343 (pages 1-261 to 1-263) describe potential solid waste disposal areas. Such sites can be reclaimed to provide wildlife habitat, but no detailed proposals for doing so are included in the draft EIS.

Response EDH-13, EDH-14, EDH-15, EDH-16, PGC-23:

The text, tables, and figures in Chapter Two of this statement have been updated to include additional fisheries data collected from April 1977 to May 1978, and the information on salmonid reproduction in Turkey Creek.

As mitigation for wildlife habitat loss at the proposed plant site, the applicant has agreed not to develop a 456-hectare (1,127-acre) tract of land in the Lakefront site. Through consultation with the Ohio Department of Natural Resources and the Pennsylvania Game Commission, the vegetation of this area would be managed to enhance the habitat for woodcock as well as other wildlife species. A second tract comprising some 205 hectores (507 acres) inside the plant perimeter fence would be left in its natural state. Although there are no plans for habitat management in this area, the applicant has agreed to provide the opportunities and resources needed to support research activities conducted by the Pennsylvania Game Commission and the Ohio Department of Natural Resources. In addition, the applicant proposes to donate a 38-hectare (94-acre) forested tract east of Elmwood Road and north of the Conrail tracks as an addition to the Raccoon Creek County Park or as a new Pennsylvania Game Lands Unit.

In response to comments made by the resource agencies and the general public, the applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which calls for culverting a portion of Turkey Creek and eliminating the diversion channel. The culverting plan and its associated impacts is described in Chapter One and Four of this EIS, respectively. Part of the backfill used for culverting Turkey Creek would consist of dredged material removed from the area adja-cent to the proposed pier in Conneaut Harbor. Land clearing activities will be in accordance with the Pennsylvania Erosion Control Plan. The applicant has not provided any detailed plans regarding the method of culvert installation, the time frame required, or the procedures that would be followed in dealing with stream drainage and surface water runoff during construction.

The three sites originally preferred by the applicant for solid waste disposal are no longer viable since they occupy lands that would be protected under the Fish and Wildlife Management Plan. Alternate sites have not been designated at this time although the applicant has indicated that the disposal areas would be confined to that portion of the Lakefront site that would actually be developed. The criteria for site selection would be based on the type of waste, potential for groundwater contamination, distance from surface bodies of water, and the proximity to sensitive terrestrial ecosystems. If solid waste disposal sites were located in undeveloped areas, the land could possibly be reclaimed to provide wildlife habitat. However, since the sites have not yet been selected, the Corps staff is unable to determine whether or not wildlife habitat enhancement would be feasible.

Comment EDH-17:

For instance, the DEIS indicates that Springfield Township will have to develop a public water supply system almost immediately and further that this system would cost around one million dollars. However, there were no facts given as to what type of system was needed, i.e., whether groundwater or surface water is to be used, and also what treatment would be required for that water. In review of the Gehrity and Miller study done for U. S. Steel, it becomes obvious that groundwater resources in the Springfield Township area are relatively limited, thus precluding heavy groundwater usage in that area. By using this data, it would seem to be reasonable that Springfield Township may have to go to Lake Erie for an adequate source of drinking water. The development of Lake Erie as a drinking water supply for Springfield Township would in all probability result in expenditures greatly exceeding one million dollars for intake structures, treatment facilities, distribution, and pumping. Although the primary effects portion of the DEIS addressed themselves to the usage of the water for fish, aquatic life, recreation, etc., it did not address itself to the effects that the effluent from the plant may have on a water supply intake located in the immediate area of the effluent. If Springfield Township did have to go to a lake intake for their water supply, this intake would be directly downstream from the effluent.

Response EDH-17:

Should Springfield Township and East Springfield Borough utilize a lakewater-supplied central water system, the potable water intake structure would be about 3,000 meters or further from the proposed plant outfall. The effluent would be diluted by at least a factor of 40 at the point. Based on dispersion modeling, all of the contaminants studied, with the exception of phenols, were projected to be present in typical concentrations that would meet Pennsylvania Water Quality criteria for Lake Erie and the Ohio Water Quality standards within 1,500 meters of the discharge. The phenol concentration under typical conditions would exceed the Ohio standards of 0.001 mg/l. The Pennsylvania criteria are not expressed quantitatively for phenols which are required to be substantially absent. The Ohio phenol standard would be met beyond the 1,500 meter point under typical conditions.

"Worst case" total phenol concentrations at a point 3,000 meters from the source were estimated at between 0.004 and 0.005 mg/l (based on a "worst case" ambient concentration of 0.003 mg/l and a "worst case" effluent concentration of 0.1 mg/l). This exceeds the Ohio phenol standard for public water supplies (0.001 mg/l) which is also the value set in the publication, "Quality Criteria for Water" (USEPA, Washington, DC, July 1976).

The USEPA has reviewed the proposed project and has concluded that water quality violations will occur under typical conditions and worst case conditions. This agency has advised the Corps that a discharge permit cannot be issued to a facility where violations in water quality standards will result. Therefor, the proposed effluent limitations and/or discharge port design must be altered to achieve existing water quality standards. The specific means of achieving these standards will be the subject of the NPDES permit review. Adherence to water quality standards for Lake Erie will assure protection of all potable water supplies.

Comment EDH-18:

Another area of secondary impacts we feel was not adequately covered, was that of urban runoff and possible synergistic or antagonistic effect with the mill effluent. It has been long established in the published literature that urban runoff can contain significant quantitities of pollutants, and with the proliferation of streets, paved areas, and other urban sources of pollution in the Springfield Township area, the resultant loadings on Lake Erie should at least be considered in relation with the effluent. Also, the impact of any secondary pollutants should be evaluated on the near shore productive zone in Lake Erie.

Response EDH-18:

The synergistic interaction of mill effluents and urban runoff cannot be assessed with any great deal of accuracy due to the variability in the chemical quality of surface water inputs. However, this issue should be addressed in greater detail during the review of the NPDES application by the U. S. Environmental Protection Agency and the Ohio Environmental Protection Agency.

Changes in runoff quality cannot be directly related to changes in stream quality (at the stream mouth/Lake Erie interface), because of the physical and chemical changes which stormwater undergoes after reaching the stream. Much of the suspended sediments may settle prior to discharge in the lake and BOD_5 loadings would be altered by the supplies of oxygen in the flowing streams. Thus, the total loadings of contaminated runoff for various drainage basins are likely to be higher than the actual loadings of contaminants to Lake Erie associated with stormwater runoff related to secondary development. However, assuming that the loadings presented in Chapter Four of this statement represent stormwater runoff impacts on Lake Erie, then the additional BOD_5 loading of Conneaut Harbor associated with secondary development is estimated to be less than 22 tons/year compared with a baseline loading of 400 tons/year. This represents a change of five percent or less which would result in a a slight degradation in the water quality of Conneaut Harbor.

Under the same set of assumptions, Ashtabula Harbor would receive less than six tons/year of BOD_5 from secondary development stormwater, along with 21 tons/year from secondary development sewage, resulting in less than 27 tons/year additional BOD_5 or less than 14 percent increase in BOD_5 loading of Ashtabula Harbor. In projecting these estimates, it is assumed that the equivalent of Best Available Technology would be employed at all domestic treatment plants.

These projections and other related considerations indicate the impact of secondary development of Lake Erie will be minor and that the effect of additional sewage effluent to the partially enclosed harbors at Ashtabula and Conneaut will have a direct secondary impact on Lake Erie.

Comment EDH-19:

Also, another area of concern to this office lies in the statements in the DEIS which indicate that proliferation of package sewage treatment plants could occur to handle

secondary development. In all likelihood, the Department of Environmental Resources of Pennsylvania would not allow such a proliferation to occur and this would limit any secondary growth to using on-lot sewage disposal methods or the municipality installing centralized sewerage services. There was very little mention made of the fact that most of the sewerage facilities that presently exist in the immediate study area are either approaching an overload condition or are presently overloaded. This isfurther indication that if development does occur, there will be no means, other than on-lot sewage disposal, to handle the sewerage needs of any new development.

Response EDH-19:

Those areas with service infrastructure already in place would probably accommodate a large proportion of the anticipated plant-related secondary development. Public sewer authorities have already recognized the need to expand existing service systems under baseline conditions and are presently studying ways in which this can be accomplished. In some cases, the planning effort has taken into consideration the increased demand asociated with plant-related population growth. These planning activities would have to be accelerated to circumvent system overloading under combined baseline and impact conditions. As indicated, on-lot sewage disposal is already regulated and it is unlikely that such systems would proliferate since development is tied to the availability of suitable infrastructure.

Comment EDH-20:

This office understands that there are no specific requirements for outlining secondary effects for an environmental impact statement. However, we feel that if data is submitted, it should be as factual as possible and its content be as accurate as possible. Also, the DEIS fails to clearly state that the secondary effects outlined in the DEIS is only one possible scenario that could occur and that there could quite possibly be much more significant adverse impacts than those outlined in the DEIS. The failure to make the statement that the effects outlined in the study are only one possible alternative could possibly draw the municipalities surrounding the project into a false sense of security.

This office strongly recommends that a section of the final EIS be added, carefully explaining to anyone reading the document that the facts and figures quoted in the document is only one possible set of circumstances and that municipalities should be cautioned not to use the data presented as being the only alternative to growth.

Comment NWP-25:

Without a thorough re-evaluation, it is nearly impossible for the regional, county, and local municipalities to prepare adequately for the planning, financing and installation of required infrastructure and services. The same difficulties will be imposed upon the private market and on most of the people in the Region. The output of the assessment with respect to local municipalities in the Region is woefully understated in the D.E.I.S. Such understatement -- if accepted in its present form -- will lend authority to a growth scenario which, in fact, reports only a small fraction of growth which will actually occur. The local officials already sense that the stated impact is greatly underestimated, but they will face great difficulty in trying to muster needed resources from more remotely located governmental, financial and other agencies.

Much attention has been focused during this decade on communities adversely impacted by construction growth. The extensive problems which have been reported in these areas have invariably resulted from originally underestimating impact growth. It may seem anomalous that little attention was paid to these problems prior to the 1970's, but such interests corresponds to rapid increases in the size, timing and impact of these projects.

Response EDH-20, NWP-25:

The reviewer is cautioned that other population projections exist that reasonably predict an increase of 11,000 to 58,500 new residents (refer to Chapter Four). The incremental increases of these new residents may have an adverse impact on the various socio-economic areas listed in this statement. Local Governmental officials and agency representatives are encouraged to review these various scenarios to plan for future needs associated with the construction and operation of the propcsed Lakefront plant.

Comment EDH-21:

What is the time frame for securing state permits, assuming that the Corps approves the project? We must remind the applicant that construction in Pennsylvania cannot start until they get proper state permits. It may be quite an involved process with respect to solid waste or dams and encroachments, sediment and erosion, etc.

Response EDH-21:

The applicant is fully aware of the requirement that State permits are needed before proceeding with construction of the proposed plant. Presently, no information is available regarding the time frame needed to obtain the necessary permits.

Comment EDH-22:

Refer to A-9

Comment EDH-23:

No mention was made of the Lake Sturgeon being on the Federal List of Threatened Species. These fish are known to exist presently in Lake Erie. Published information indicates that (in the past, at least) their presence in the vicinity of the proposed steel mill. They apparently require clean bottoms to feed over. The mill may have an adverse affect on their population. Just because the consultant did not catch any in gill nets, it does not mean that there are none present, as a large specimen quite likely would not be captured by a conventional gill net. We are not attempting to make a "snail darter" issue out of the Lake Sturgeon, but think it should be addressed in the final EIS. It does deserve much more consideration than other species in Lake Erie, due to its precarious status with respect to surviving as a species.

Response EDH-23:

On 17 January 1979, the U. S. Department of Interior republished the complete list of Endangered and Threatened Wildlife and Plants in the Federal Register. This listing, which is inclusive through 30 September 1978, does not include the lake sturgeon. However, the importance of this species was discussed in the EIS since it is shown on the lists maintained by the State of Ohio and the Commonwealth of Pennsylvania.

The contention that sturgeon require clean substrate is not accurate since this species is known to exhibit filter feeding behavior over a variety of substrates. Such cosmopolitan food types as amphipods, crayfish, fishes, fish eggs, insect larvae, leeches, molluscs, nematodes, nymphs, and plants utilized by sturgeon occur in areas not always associated with "clean bottoms."

Traditional sturgeon - commercial fisheries have employed all types of gear including gill nets. Current commercial fisheries are regulated by mesh size to crop certain size ranges of sturgeon. Although the applicant's gill net mesh size did not collect a large sturgeon, younger sturgeon would be susceptible to conventional gill net mesh size.

Since no sturgeon were captured during the sampling effort, the applicant believes that the proposed plant would not have an adverse effect on the Lake Erie sturgeon population.

Comment EDH-24:

How will the plant impact on the Northwest Erie County Regional Sewer Authority's plans for sewage treatment in the area? If the mill is built, will it slow down progress with respect to the central plant? We already are in need of sewers and better treatment of waste and would be concerned that a sudden influx of people could further delay this project, as well as adding additional burdens to the area waters. Also, it should be stated that revisions to the Comprehensive Waste and Water Quality Management Study will have to be completed if the mill proposal is implemented.

Response EDH-24:

The applicant's Consultant has indicated that the construction of the proposed Lakefront steel plant would probably increase the chances for public financing of the improvements proposed by the Northwest Erie County Regional Sewer Authority. This observation is based on projected increases in the density of development which are in turn related to secondary growth. Projected density changes may necessitate the revision of the Comprehensive Waste and Water Quality Management Study.

Comment EDH-25:

Based on some data we have seen in our section of Lake Erie, we seriously question page 4-593 and 4-594 with respect to some of the "typical" concentrations in Lake Erie intake. For example, we would not consider oil and grease of 1 mg/l to be "typical." Nor, for example, would we accept 0.04 mg/l of ammonia as being typical. The first we would say is on the high side, while the latter we believe is low. The fact that the ammonia in the background appears to be low puts the proposed ammonia discharge under serious question. We also have reason to believe that the listing of copper is on the low side. This could also be significant if synergistic effects are considered. These are not necessarily the only discrepancies we noted in the chart.

Response EDH-25:

Field sampling and analysis progams by Aquatic Ecology Associates at the proposed site indicated typical oil and grease concentrations of 1.0 mg/l. It is recognized that these concentrations are somewhat higher than is commonly observed in Lake Erie, but there is no reason to suspect that these values are inaccurate. This comment tends to contradict the comment in the PDER letter, which implied the values might be too low.

Ammonia concentrations for Station LE9, the proposed location for the intake structure, average 0.174 mg/l over the one-year study period (six sampling dates). The applicant's reported value of 0.04 mg/l were in error and appropriate changes have been made.

Copper concentrations were also reported incorrectly. Review of the applicant's baseline data indicate that all sampling dates and stations Cu values were less than 0.01 mg/l. However, since finite values were not given, the revised tables illustrate typical levels as being 0.01 mg/l.

Comment EDH-26:

Is it possible that the hypolimnion could reach the effluent pipe in summer during a seiche? Information gathered off the Pennsylvania shoreline revealed cold water at about 35 to 42 feet down from the surface at times during the summer of 1978 (see page 4-862).

Response EDH-26:

The analysis of water intake temperatures at Conneaut and Erie indicated that water upwells relatively frequently during the summer at the rate of approximately two or three times per month. However, the temperature of this water was more often indicative of warmer "thermocline" temperatures, than "hypolimnion" temperatures. It seems likely that hypolimnion water would only occasionally, if at all, upwell as far as the intake.

Comment EDH-27:

Refer to DOC-12

Comment EDH-28:

Refer to CRG-24

Comment EDH-29:

Refer to CCM-4

Comment EDH-30:

On page 4-839 regarding chemical additives to cooling water, the DEIS indicates additives, including inhibitors, biocides and polymers, will be used. The page says that no additives containing heavy metals will be used. There is not sufficient data available. What will the effects of the organics be on the Commonwealth? We believe this should be included in the EIS. It could be significant.

Comment EPA-133:

P. 4-839, under Section 4.743 (Chemical Additives) - More information is needed about the dispersants, corrosion inhibitors and biocides. Biocides may mean more chlorine and a reevaluation of impact would be necessary.

Comment EPA-134:

Indirect Cooling Waters

In this discussion in Chapter One (pp. 211-235) it is continually stated that there will be no chemical addition to indirect cooling water, therefore, no treatment is required. However, in other sections of the report, we note that chemicals will be added to the cooling system to control corrosion and biological growth. Therefore the blowdown from the indirect cooling systems may require treatment prior to discharge.

Response EDH-30, EPA-133, EPA-134:

In order to control the quality of water used in the indirect cooling water recycle system, three basic types of water treatment chemicals would be required: dispersants for deposit control, corrosion inhibitors, and biocides. The applicant intends to use presently available additives, which, by the time they are discharged, will have degraded into nontoxic materials. The applicant considers it premature at this time to be more precise because such treatment is site/system specific and the state-of-the-art of the technology is continually improving. Further, the applicant indicated that additives containing heavy metals would not be used. There is little doubt, however, that many of the possible additives could require further evaluation as part of the NPDES permitting process.

Comment EDH-31:

Refer to DOC-12

Comment EDH-32:

Also, what would the time frame be on a start-up of operations be? How quickly would the water temperature change after a start-up? We have experienced at least one fish die-off following a "start-up" cooperation during the winter months.

Response EDH-32:

Although it is not possible to predict the actual time frame, a relatively slow start-up for such a large facility is anticipated. The effluent volumes and estimated temperatures for each major process area of the proposed plant were presented in Chapter Four of the Draft EIS. There are, in almost all cases, two or more units in each of these process areas. The possibility that a large number of these units would be started up at the same time (e.g., on the same day) is remote.

Comment EDH-33:

Volume 1, page V (#5) -- 15,800 new residents; 5,265 in Ohio and 2,83[illegible] in Pennsylvania. Where are the other 7,000 or so people going to live?

Response EDH-33:

The 5,265 new residents in Ohio and 2,830 in Pennsylvania are those estimated to live in the Local Study Area (Conneaut and Springfield). The remaining new residents are expected to locate throughout the Regional Study Area which consists of Crawford and Erie Counties, PA, and Ashtabula County, OH.

Comment EDH-34:

Refer to CRG-43

Comment EDH-35:

Refer to CRG-43

Comment EDH-36:

Refer to CAM-5

Comment EDH-37:

Refer to DOC-1

Comment EDH-38:

XII (#8) If synergistic effects cause agricultural losses, how large will the losses be? What will the economic disadvantages be to farmers? Will any compensation be awarded them from anyone? Also, if it is enough to cause plant damage, what about damage to animals or man? Will the incidence of cancer, for example, increase?

Comment GG-3:

To be specific the Fund is concerned about the following air pollutant emissions which will be emitted by this facility:

1. The primary pollutants of sulfur oxides, nitrogen oxides, the interaction of sulfur oxides and nitrogen oxides, fluorides, heavy metals and particulates.

2. The secondary pollutants of ozone, the interaction of ozone and sulfur oxides, peroxyacetylnitrate (PAN) and acid rainfall.

Comment SAE-1:

(A). I support your assessment in Section 5.102, p. 5-38 and Sec. 4.653, p. 4-757, that sulfur dioxide and ozone additions from the Lakefront Steel Mill may increase injury to agricultural crops. Even if the Lakefront Steel Mill would contribute only small amounts to the background ozone level, the long term effect of small additions of ozone will likely result in increased frequency of crop damage.

Comment SAE-4:

(C). Your assessment in Section 5.73 and 5.102 that interaction of sulfur dioxide and oxides of nitrogen with ozone could increase crop damage is correct. Our research at the Vineyard Laboratory, Fredonia, N. Y., has shown that small increments of sulfur dioxide added to ambient air will increase the amount of ozone-induced oxidant stipple injury to Concord grapevines, and will reduce soluble solids of the grapes (unpublished). The data suggested that sulfur dioxide in the air may lower the threshold for ozone injury to the vines.

Response EDH-38, GG-3, SAE-1, SAE-4:

The Draft EIS discussed the potential that synergistic interactions of ozone with SO_x or NO_x could cause acute and chronic injury to sensitive crops, such as grapes, at lower concentrations than either constituent alone (refer to paragraphs 4.653, 5.73, and 5.102 of the Draft EIS). Materials reviewed by the applicant's consultant reported synergistic leaf injury effects in a laboratory fumigation of Ives grape vines with 0.2 ppm of O_3 and 1,300 ug/m^3 of SO_2, (Westinghouse 1976).

Corps staff is aware of certain aspects of the cited study which cast doubt on the validity of the experiment results. Staff does not feel that thresholds for damage to vegetation caused by synergistic effects have been demonstrated. Most studies, including the study cited by the applicant, assess acute injury as opposed to damage caused by a long-term exposure to low levels of pollutants. In regard to synergistic effects, the USEPA concurs with Corps staff that the state-of-the-art is still too rudimentary to accurately establish impacts. However, if good methodologies are available to quantify and evaluate such effects at the time the applicant applies for a PSD permit, the applicant will be required to do the appropriate analysis, if deemed necessary by the USEPA. Also, data to fully assess the potential synergistic impacts, if any, to agriculuure could be part of the scope of the proposed monitoring program for the Lakefront facility.

Comment EDH-39:

IX (#19)--Critical sewerage facilities needs by 1982. What does critical mean? Pollution problems? Where? How bad? Will Chapter 94 and the possibility of building bans affect the plan? If sewers are not available and septic permits are difficult to secure because of soil types, we can foresee problems. Who will finance the plants? We already have problems in Erie County with respect to existing sewerage facilities that need to be upgraded.

Response EDH-39:

Within Springfield Township and East Springfield Borough, sewage service is critical because most homes utilize septic tanks that do not function properly during wet weather. In view of this situation, development may not be allowed or encouraged in these areas unless an acceptble means of sewage disposal is found. Traditionally, sewage has been disposed of by public sewers, septic tanks, or private packaged treatment plants. If public sewers are not available, developers would be expected to seek septic tank permits. Where septic tank permits are not issued due to poor soil conditions, developers would be expected to seek approval to use an alternate method, such as private packaged treatment plants. If the sewage disposal problem is not resolved, development is considered far less likely to occur.

The costs of a sewage treatment plant and interceptors or expansion of a neighboring system to serve this area would be borne by the communities involved unless a construction grant could be obtained from the appropriate State and/or Federal Governmental agencies.

Comment EDH-40:

IX (#21)--No mention of hunting or fishing. What will impacts on fish and game be? It appears with the plant and secondary development and growth, the game and fish will be under more pressure and the available land areas for hunting and fishing will be decreased.

Comment OEPA-7:

3. Summary Statement, (21) p.ix, 3rd sentence: Should read ... By 1990, approximately 5,300 operations-related new residents would occupy the area placing increased pressure on public ballfields, beaches, picnic, hunting, and fishing areas as well as private recreation areas.

Comment OEPA-8:

Summary Statement, (3), p.iiii: Consideration should be given to wildlife related or outdoor recreational use of the 1,470 acres of land not slated for development.

Response EDH-40, OEPA-7, OEPA-8:

The summary section of this Final EIS has been modified in response to these comments.

Comment EDM-1: Refer to CCM-4

Comment EDM-1:

Refer to A-7

Comment EDM-2:

Refer to A-7

Comment EDM-3:

Refer to A-7

Comment EDM-4:

Refer to DW-9

Comment EPA-1 to EPA-7:

These comments are summary statements that are answered individually in the EPA responses that follow.

Comment EPA-8:

Refer to ADM-3

Comment EPA-9:

Refer to CWP-1

Comment EPA-10:

Refer to CRG-15

Comment EPA-11:

Refer to N/R

Comment EPA-12:

Section 4.614, Domestic, Public/Commercial, Leakage (DPL) Water Use Impacts relates "Since adequate water supply sources exist, the impacts would be primarily financial." Adequate water supplies only exist from Lake Erie and then only if water treatment plants are upgraded. If a central water system is not built before population begins to enter the area there could be a serious water problem. At present, no central water system exists in the communities expected to receive the greatest growth. The greatest ground water supplies are in the southeast Regional Study Area where the majority of the incoming population are not expected to locate.

Comment PDER-16:

2. Population growth generated by the proposed steel plant would increase demands for expanded water supply and sanitary wastewater treatment and collection sevices, especially in East Springfield Borough and Springfield Township. The Draft EIS suggests that affected municipalities begin planning to meet these projected demands. However, the Draft EIS deals only superficially with the steps that the municipalities can take to adequately cope with these demands. Two water supply alternatives that should be further explored in the Final EIS are:

a. Since the proposed lakefront plant will satisfy its water supply needs with water from Lake Erie and, since the most dependable but expensive method of supplying the projected future water needs of East Springfield Borough is with water from Lake Erie, the Borough might, through legal arrangements, be permitted to tie into the Lake Erie water supply intake for the steel complex.

b. A thorough hydrogeological study may possibly identify areas of high ground water yield. The area and the Lake Erie Basin Report indicates that there are ancient stream valleys in the region filled with gravel aquifers that produce high yields. Therefore, while we can agree with the conclusions that randomly drilling the area could result in water deficiencies, we believe that an effort to develop ground water in a knowledgeable and scientific manner could provide the water supply that is needed.

Comment PHCOE-36:

"One possibility which merits consideration is possibly having the proposed water intake of U. S. Steel sized adequately to fulfill the needs of the local municipalities..."

Comment STP-2:

3. Municipal Potable Water Facility

The municipalities will have a very strong need for a potable water system as development plans are formulated. One question which will need to be investigated is the source of supply for the system.

Lake Erie is a very distinct possibility, however, the municipalities have not initiated any studies to examine this situation. One possibility which merits consideration is possibly having the proposed water intake of U. S. Steel sized adequately to fullfill the needs of the local municipalities. We realize that some costs would be involved with doing this, but if shown to be the most economic alternative, we would like to have this option available.

Response EPA-12, PDER-16, PHCOE-36, STP-2:

The most severe water supply impacts are expected in Springfield Township and East Springfield Borough, where growth associated with the project is considered likely to necessitate the establishment of a central water supply system.

Should sufficient ground water resources exist, Springfield Township and East Springfield Borough could meet their domestic and industrial needs through a central water supply system that utilized ground water. If such resources are found to be inadequate; these communities would have to build a Lake Erie water intake and centralized treatment plant which is a more costly undertaking. It is not likely that they could enter into existing systems since the nearest facilities, located in Albion and Girard Boroughs, are small and already operating at capacity. The nearest "downstream" lake-water supplied central system is in the city of Erie, approximately 20 miles away.

In regard to the possibility of East Springfield Borough and Springfield Township tying into the U. S. Steel water supply intake, the applicant believes that such a study could be conducted only after a commitment to proceed with the detailed design of the steelmaking facility. If a joint water supply intake could be mutually

beneficial to both parties and meet legal and environmental requirements, then more definitive plans could be developed.

Detailed hydrogeologic investigations would have to be conducted to determine whether the least expensive approach, that of utilizing ground water supplies, is feasible and. if so, how those supplies should be developed. However, any such detailed planning studies would have to be undertaken by Springfield Township and any other municipalities involved. The applicant has already completed a preliminary study. Geraghty and Miller, Inc., Groundwater Investigations, Proposed Greenfield Project, U. S. Steel Corporation, June 1977. This study identified and described ground water problems on the site and in the study area and may be a useful tool in the planning of future investigations.

Cost estimates (in 1975 dollars) for the central water supply system were $490,000 and $927,000 for ground water supplied and lake water supplied systems, respectively. These costs include any necessary intake structures and treatment facilities for sedimentation, filtration and disinfection, and odor and taste removal. Distribution costs would also be incurred, but would be similar for either system.

Comment EPA-13:

Section 2.679 uses unreferenced numbers. What is the origin of 594 gpd? How was it determined?

Response EPA-13:

The origin of the figure "594 gpd," presented in Section 2.679 as the groundwater flow from an area of potential contamination to Lake Erie was based on an application of Darcy's Law in the form:

$$Q = KIA$$

Where: Q = Discharge, in cubic meters per day
K = Hydraulic conductivity, in meters per day
I = Hydraulic gradient, dimensionless
A = Cross-sectional area of aquifer, in square meters.

K and I on the site were estimated to be .05 m/d and .01, respectively. For the cross-sectional area, the width of the area of potential contamination was assumed to be 300m. The vertical component to be considered relates only to the maximum depth below that water table to which the contaminant might reach in its travel across the property. This was taken as 15m, which is probably high. Substituting the above values into the given equation, the discharge amounts to 2.25 m^3/d or 594 gpd.

Comment EPA-14:

Section 2.683, "Water Use" - It is possible that the Pymatuning Reservoir which is currently used for flood control and recreation could also have potential as a source of water supply. This should be addressed in the final impact statement.

Response EPA-14:

The Pymatuning Reservoir was constructed to provide low flow augmentation flood control and recreational benefits. To maintain the value of this facility as well as downstream impoundments, dependent on its outflow, a constant pool elevation is a necessity. Use of the Pymatuning Reservoir as a source of potable water could result in a significant drawdown of the pool elevation which in turn would seriously jeopardize the future existence of peripheral wetlands, reduce recreational values, and impair low flow augmentation.

Further, Mr. Clifford H. McConnell, Deputy Secretary of the Pennsylvania Department of Environmental Resources, stated that his department would generally oppose water diversions for this purpose. Thus, it does not appear that the Pymatuning Reservoir represents a viable water supply alternative.

Comment EPA-15:

Chapter 4-356, "Water Supply Infrastructure" - The total estimated costs of operation are based on a 5-year bond at 5-1/2% interest. The discount rate published by the Water Resources Council is 6-5/8%. This rate is to be used by all Federal Agencies in the formulation and evaluation of plans for water and related land resources for the period October 1, 1977 through and including September 30, 1978. An explanation should be given concerning why 5-1/2% was used in lieu of the 6-5/8% rate.

Response EPA-15:

The interest rate used for the 25-year municipal capital improvement bonds was 5-1/2 percent. Selection of this interest rate is a completely separate issue from a recommended discount rate established by the U. S. Water Resources Council. The interest rate represents a cost of capital in the municipal bond market; whereas the discount rate represents the implicit time value weighing of future versus present costs and benefits. The discount rate to be used is a policy matter, rather than a money market matter.

Since the original impact assessment was performed, there has been a rise in municipal bond interest rates and coincidentally a 6-1/2 percent rate would be appropriate to describe present interest rate levels.

Comment EPA-16:

Water Supply

Chapter 2-921 - It is stated in "Regional Study Area" section that an alternative estimate for domestic water use in Erie County for 1971 was considered too high. Explanation should be given to the incorrect assumptions or methodology used in

calculating the estimate. Is it possible that the domestic water use estimate in the Pennsylvania portion of the Regional Study Area in 1975 was too low? The number 27.24 mgd is taken from the Assessment and does not correlate with other values given in this section. Why do water requirements differ from those used in the Assessment?

Response EPA-16:

The alternative estimate for domestic water use in Erie County (26.66 MGD in 1971) was rejected because it implied a relatively high water use unit requirement of 98 GPCD. A study of water use rates has indicated that a unit requirement of 80.73 GPCD, the figure used in the EIS, is a dependable value for the Pennsylvania Study Region. The text of this Final EIS has been revised to eliminate the inconsistencies.

Comment EPA-17:

Those suppliers drawing their water from the ground water wells are getting a maximum of 10 gpm in the study area. This will not be sufficient to handle the population influx if the water is used for other than domestic purposes.

Response EPA-17:

Unfortunately, the greatest groundwater resources are in the southeastern section of the Regional Study Area, where the majority of the incoming population is not expected to locate. However, it is not generally true that water well yields in northwestern Pennsylvania are very low (under 10 gpm) and incapable of supplying anything other than domestic needs. For instance, in 1975-76, the three municipal wells serving the Borough of Girard yielded an average of 45 gpm each. The preliminary investigations by Geraghty and Miller, Inc., indicate that potential well sites in Springfield Township could yield up to 15 gpm or more.

The future water supply requirements that have been estimated by the applicant's consultant include average industrial requirements, as well as domestic requirements. This information together with the related impact these requirements would have on each municipality, was presented in Chapter Four of the Draft EIS. The impact of these requirements on each municipality has been discussed in detail in the associated text. In some areas, detailed hydrogeological studies would be required to determine whether or not these needs can be met by groundwater supplies. It is acknowledged that these requirements could change if new major industrial water users (e.g., power plants) were to locate in the study area. Such major users, however, would supply their own water, most probably from surface waters (94 percent of self-supplied industry in this tri-county study area in 1976, used surface water).

Comment EPA-18:

Chapter 4, page 4-369, Section 4.309. In this section an assumption was made that Springfield Township and/or East Springfield Borough may decide to tie into the proposed Northwest Erie County Sewer Authority's facilities. It is unlikely that this will occur, since Springfield Township and Borough are not a part of the Northwest Erie Facility Plan study area. A more valid assumption would be Springfield Township and Borough constructing their own sewage treatment plant (STP) and interceptors.

Response EPA-18:

Most of the secondary development induced by the proposed mill in Pennsylvania is expected to occur in the Springfield area. It is acknowledged that Springfield Township and East Springfield Borough may not be included in the area served by the Northwest Erie County Regional Sewer Authority. Thus, it is likely that the State's Comprehensive Waste and Water Quality Management Study would have to be revised, if the mill proposal is implemented.

Comment EPA-19:

Chapter 4, page 4-371 - Funding by Pennsylvania for an approved facility plan for Springfield Township by 1980-81 is not possible. There is little or no money available for the funding of new Step 1 applications for sewage treatment plants. Springfield Township would most likely not be funded until 1982.

Response EPA-19:

Sewage treatment plants have traditionally been financed by either existing users, new users or bonds, and Federal Government agency grants. Representatives of the USEPA have indicated that they cannot guarantee that the funds needed for sewage treatment plant construction in newly developed areas will be made available. Since there may be a need for a treatment plant in the Springfield area, it is possible, but not certain, that the EPA could fund some part of a sewage treatment plant. If the funds are not provided, individual users would be expected to finance the treatment plant either through increased rental charges or the issuance of bonds.

Comment EPA-20:

Chapter 4, page 4-377, Section 4.315: The assumption that EPA will fund new STP's for newly developed areas is not necessarily true. Under the new Act and the guidelines of PRM 78-9, EPA is advocating the consideration of alternate systems other than centralized sewerage treatment systems. In view of this, Tables 4-191 and 4-192 should be amended.

Response EPA-20:

The appropriate tables have been modified in response to the comment.

Comment EPA-21:

It is noted on page 2-449, that most municipalities have oversized interceptors. This may be correct, but it points out the need for close coordination of the secondary impacts of this facility on the manner of solving the existing and new residential wastewater treatment problems. Solution in this area must be in terms of relevant existing priorities, and eligibilities for increased facilities, in keeping with the Public Owned Treatment Works treatment goals of the 1977 Amendments.

Response EPA-21

Corps staff acknowledges the concerns that were presented in the above comment and encourages close coordination among Federal, State, and local Governmental agencies.

Comment EPA-22:

Refer to CON-5

Comment EPA-23:

The City of Conneaut, Ohio, in accord with the Clean Water Act, is presently developing a 201 Facility Plan. The effluent discharge from the existing wastewater treatment plant is not meeting current Water Quality Standards, and the outfall is subject to lake elevation changes which effects the capacity of the final settling tanks. The proposed U. S. Steel plant will impact the population of the City of Conneaut, thus impacting the wastewater flows to the treatment plant. It is suggested that the City and U. S. Steel look at the possibility of combining their waste effluents and discharging them through the U. S. Steel outfall into Lake Erie. Benefits from such an arrangement could include dilution of flows, if compatible, capital cost savings for the City, reduction of inshore pollution from the City's existing outfall, and coorection of the City's problem with lake elevation efects on the treatment plant. It is recommended that the City and U. S. Steel, by way of the Facility Plan and EIS respectively, pursue the possibility of a common outfall and treatment for their mutual advantages.

Response EPA-23:

The aplicant has indicated that a study of a joint outfall discharge could be conducted only after a commitment would be made to proceed with the final plant design. If both parties agree that a joint outfall could be mutually beneficial and meet legal and environmental requirements, more definitive plans could be developed. At the present time, the applicant believes that the combination of the outfall as proposed, would not be economically feasible since about 8,500 feet of pipeline would be needed to join the City Treatment Plant with the Lakefront plant discharge.

Comment EPA-24:

Page 4-375. The 1.0 mg/l effluent phosphorus concentration for effluent in Erie, Pa, has not been met in the last several years, e.g., 1977 - 1.8 mg/l, 1975 and 1976 - 2.2 mg/l. Recent enforcement action in Lake Erie also indicates that there may be other treatment problems. Phosphorus should be limited. A 0.5 mg/l concentration is not an unrealistic limit that should be imposed, along with an appropriate load allocation.

Response EPA-24:

The footnotes on Table 4-189 (page 4-375) of the Draft EIS stated that "conversations with treatment plant operators indicate that standards are generally being met or exceeded." This sentence has been deleted from the impact statement. The suggested alternative limitation of 0.5 mg/l and the fact that the 1.0 mg/l effluent phosphorous concentration for lake-discharge sewage and treatment facilities has not been met, are acknowledged as being within the expertise and regulatory authority of the USEPA. The table on selected effluent characteristics of treatment plants has been modified by footnote to express the information conveyed in this comment.

Comment EPA-25:

Page 2-542. "According to the Pa. PUC, any increased demand in the Regional Study Area would be met by transmitted power from Homer City Station, other generating stations in the Penelec system and imported power from Ohio and New York State." If this is so, why does Penelec say that Coho I is needed now to meet energy demands? According to reserve figures found on Table 2-255 on page 2-547, PPC has sufficient reserve capacity for the next ten years which could be sold to plant-related consumers. It appears obvious that energy demand forecasts for this region differ. The energy demand question for the regional study area should be addressed by the applicant.

Response EPA-25:

Penelec's ability to meet short-term demand increases in the Regional Study Area does not imply that Coho I is unnecessary or that "energy demand forecasts for this region differ." Electric utility supply/demand balances and the need to construct additional capacity can only be assessed on a system-wide basis. Penelec serves a 15,000-square mile area of northern and west-central Pennsylvania, and the company's proposal to build Coho I in Erie County is not necessarily related to projected demand growth in that county.

Chapter Two of the statement illustrates the operating characteristics of the three electric utilities serving the Regional Study Area. In each case, peak demand is about 50 percent higher than average demand. For each utility, average demand is expected to increase to close to 1976 capability by 1988, indicating that significant new capacity would be necessary to meet peak demand (the ability to meet average demand is not the relevant criterion for utility planning purposes). Penelec, in particular, experienced peak demand of more than 90 percent of system-wide capability in 1976. Depending on local demand growth rates, Penelec's peak capacity could be exceeded even before the proposed Coho I station were to come on-line in the mid-1980's.

Analysis of the future energy demand requirements by the applicant is not considered appropriate since the proposed plant and related secondary growth represents only a small fraction of the baseline increase in demand. The case for need as it relates to online operation of the COHO facility should be discussed in detail in the draft EIS now being prepared by the Region III Office of the U. S. Environmental Protection Agency.

Comment EPA-26:

Page 4-438. The report relates steel plant impact on electrical demand to the impact on the total capacity of Penelec. This methodology of reporting impacts is rather misleading. It does not indicate how this will impact Penelec's capability of supplying electricity to the "newcomers" in this area or how it will affect Penelec's reserve capacity on the whole.

Response EPA-26:

Secondary electricity consumption related to the proposed Lakefront Plant is expected to be less than one percent of Penelec baseline demand, indicating an insignificant impact on capacity. As shown in Table 2-257, Penelec is projected to have generating capability of about 3,150 mw in 1988 and average demand of 1,950 mw in the same year, for a "reserve" capacity of 1,200 mw. Assuming a peak to average demand ratio of 1.5, peak demand in 1988 would be 2,925 mw, for a "reserve" of 225 mw. The 42 million kWh demand by the proposed Lakefront Plant related secondary development could be provided by 5 mw of capacity

$$\left(\frac{42 \text{ million kWh}}{8{,}760 \text{ hrs/yr}} = 4.8 \text{ mw}\right)$$

with a possible requirement of 7-8 mw to meet peak demand. Thus, impacts on Penelec "reserve" capacity would be about four percent under peak demand conditions and negligible for average demand conditions. In neither case could this impact be considered a strain on the Penelec system.

Comment EPA-27:

The statement on page 4-415 that the network roadways have sufficient capacity to handle the additional volumes does not appear to be substantiated. In fact, in the discussion of the preferred action for deliverying and dispersing traffic to and from the U. S. Steel site, it is clearly shown that several of the major intersections will be operating under Level of Service F (Forced Flow).

Comment JB-1:

The streets, sewer system, schools, etc., are not sufficient to support the increased use that will be required.

Response EPA-27, JB-1:

As indicated in the Draft EIS congestion with poor levels of service would occur at certain intersections. This congestion would back up along the roadway for a short distance, but the roads themselves would generally have an adequate level of service for the volume of traffic that would have to be handled. A distinction must be made between a poor level of service on a roadway link and a poor level of service at an intersection. As the analysis indicates, the projected volumes of traffic could be handled by the roads in the network without creating a poor level of service on the roadway. Only at certain intersections would poor levels of service be expected. It is necessary to state that the roads could handle the additional traffic volumes, so as to provide an accurate description of the projected traffic impact. Otherwise, it might be incorrectly assumed by the reviewer that the roadway links were also experiencing a poor level of service, as well as certain intersections. If the roads were not able to adequately handle projected traffic volumes and a poor level of service was present on the roads (as well as at the intersections), then travel time on the roads would be substantially increased over what it could be with congestion only at intersections and adequate capacity on the roadways.

Comment EPA-28:

Refer to DOT-3

Comment EPA-29:

The final EIS should further develop its plan to mitigate the project-related traffic congestion. Even though individual measures might not in themselves resolve the traffic congestion, some combination of them might be effective.

The final EIS should study such combinations and any conclusions should be backed by analyses similar to those that identified the problem, i.e., - resultant traffic levels and levels of service due to various mitigation schemes.

Response EPA-29:

A number of mitigative measures to improve traffic conditions were identified on pages 4-419, 5-20, and 5-21 of the Draft EIS. It is difficult to determine in advance which combinations of mitigative measures would provide the most effective and economical amelioration of the projected traffic congestion at certain intersections. Decisions at each intersection concerning additional travel lanes, signal controlled reversible travel lanes, special turning lanes, and increased lane widths can only be made when the final engineering alignments of the highways are determined and the viability and resultant improvements of each mitigative measure or combination of mitigative measures can be more reliably determined.

Other mitigative measures include rearrangement of shift schedules. The feasibility and effectiveness of staggered shifts for plant construction, operations, and supporting activities in the 1981 to 1985 time period would have to be tested and the practical limit of the shift spread (e.g., two hours) established. During the full-time operations phase in 1990 and beyond, the location, size, and nature of other industries and businesses in the area would have to be known in order to assess the merits of widespread shift scheduling to relieve peak-hour traffic congestion.

Plant-related truck traffic is projected to be only five percent of the total plant-related traffic in 1990 during the 7-8 a.m. peak-hour and considerably less than that in 1985 and 1981. A reduction in truck traffic is not anticipated to have a significant effect on overall traffic congestion. Also, plant related truck traffic could be regulated to coincide with off peak hours or reduced by optimizing rail utilization. However, the feasibility and specific details relative to these alternatives would need to be determined at the time of implementation. At this stage of planning, there are so many variables to consider, it is impracticable to project a specific delivery schedule.

Comment EPA-30:

The discussion on pages 4-545 and 4-550, and Table 4-264 on page 4-553 do not make it clear to the reviewer what the total CO concentration will be at the selected receptors; nor is the exact location of these receptors made evident. Furthermore, the brief discussions on pages 4-545 and 4-550 do not indicate what meteorological inputs were used in the modeling, nor if the interactions and receptors selected are reflective of the worst case.

Comment EPA-31:

The Hiway model calculates only traffic-related concentrations. Worst case CO impacts at the receptors would be the sum of the traffic-related concentrations. Therefore, the table on page 4-553 should be revised to demonstrate total carbon monoxide concentrations at the receptors (worst-case transportation-related plus worst-case background levels).

Comment EPA-32:

The final statement should also indicate the meteorological assumptions made in the modeling. Wind speeds of one meter per second, atmospheric stability class E or F, wind directions nearly parallel to the principal line source, and winter temperatures are usually adequate for an appropriate "worst-case" CO analysis. Other factors can be used only if there is sufficient historical data to thoroughly substantiate them as more representative of true "worst case" conditions.

Comment EPA-33:

The final EIS should also indicate on Figures 4-451 and 4-452 the exact location of the receptors, their distance from the highway, and the rationale for their selection. In light of the analysis on traffic levels and levels-of-service on pages 4-414 through 4-419, it might also be appropriate to determine worst case microscale highway related CO concentrations at the intersections projected to have Level of Service F.

Response EPA-30, EPA-31, EPA-32, EPA-33:

Expanded discussions of HIWAY carbon monoxide modeling and air quality impacts have been included in Chapter Four of this Final EIS in response to the above comments.

Modeling was carried out to determine worst case carbon monoxide impacts and the results were reported in the above referenced table. The analysis considered all traffic in the vicinity of major intersections whether or not it was related to the proposed action. Quantification of background levels from nontraffic related sources or long-range transport of traffic emissions is difficult considering the present state-of-the-art. The applicant considers the additional background levels from distant roadways to be minimal in future years since most vehicles would be equipped with pollution control devices.

Meteorological parameters utilized in the modeling were based on actual measured data for the region and represent observed worst case conditions. These parameters were determined by examining an entire year of hourly data for Erie. The receptors listed in the above referenced table represent worst case levels near the roadways and are located with respect to XY grids at the major intersections with north and east having positive coordinates and south and west having negative coordinates.

The highest CO levels were considered in detail regardless of the "Level of Service" at the intersections. In many cases, the poorer level of service roadways (F as opposed to C or D) do not always correspond to the highest CO levels. This situation

occurs because, over a one-hour average, some multilane roadways with better service levels have much larger traffic flows and consequently greater total emission rates than the lower capacity roadways.

The conclusion that can be drawn from the inventory of the traffic-related emissions is that the phasing out of older model automobiles and the resultant decrease in CO emissions in grams per mile would cause the maximum total ambient concentrations to be less than half the federal standards.

Comment EPA-34:

Noise impacts resulting from traffic level changes appear minimal. However, similar to our request on the air analysis, we believe that the final EIS should include a description of the inputs used in the noise modelling. Specifically, we are interested in the truck percentages and the speeds used. It appears that there will be a minimal impact at 100 meters from the highways. As long as there are no sensitive receptors within this distance, it appears that we will have no objections to the project from a noise standpoint. However, if there are receptors closer than 100 meters, the final EIS should identify them and calculate the noise impacts at the closer distance. The EIS should also more clearly identify which receptor is reflective of noise level changes associated with the Conneaut Business District, where page 4-419 states that heavy traffic would pass.

Response EPA-34:

A considerable amount of information has been assembled to perform the modeling of traffic-related noise impacts. Incorporation of these data into the Final EIS would be of marginal value to the average reviewer and would merely serve to increase the size of this document. However, this information is available for inspection by agency personnel at the U. S. Army Engineer District Office in Buffalo, NY.

Traffic flow data including vehicle-kind source highway alignments and other pertinent information were inputed into the model. Most of the residences along major roads in the project area are located about 30 meters (100 feet) from the pavement edge or approximately 38 meters (124 feet) from the road centerline. Thus, noise levels were determined using these distances. The reference to 100 meters in the above comment is incorrect.

The road traffic noise changes, or levels, have not been determined for the Conneaut Business District because there are no available means for calculating or predicting road vehicle traffic noise levels at stop-and-go intersections, or at very low speeds. In view of the negligible predicted increases of 1 db in the traffic noise levels on Route 20 and SR-7 elsewhere outside of the Conneaut Business District it may be concluded that the increase in the moving traffic noise level in the business district likewise would be small.

With regard to the "heavy traffic" statement on page 4-419 of the Draft EIS, the use of the term is in relation to the capacity of the roadway and the resulting level of service as described in Table 4-209, page 4-420, rather than in any relationship to the associated noise level of freely moving traffic.

Comment EPA-35:

Refer to CCM-1

Comment EPA-36:

Refer to CCM-1

Comment EPA-37:

Refer to AHC-15

Comment EPA-38:

b. Buffered Stream - If the plant size is to remain as proposed, a buffer area should be left between the Creek, site wetlands, and the facility. While the applicant states that this concept is undesirable, there are no concrete reasons or evidence of detailed study which preclude its implementation.

Response EPA-38:

The applicant's revised plan for Turkey Creek specifies that most of the channel and adjoining riparion habitat would not be developed. In this respect, a buffer zone or "greenbelt" would be maintained along most of the length of the Turkey Creek channel. However, the section of the creek between State Line Road and a point 1,500 feet above Lake Erie would be culverted and no buffer zone would be established in this reach.

Comment EPA-39:

Refer to DA-1

Comment EPA-40:

The above buffer strip concept has been discussed with the applicant in a more detailed manner during pre EIS liaison. Through inter-agency coordination it has been tentatively suggested that a good preliminary concept would be to preserve at least three of the site's most productive wetlands. They are located in the areas north and west of the intersection of the Penn Central railroad tracks and Elmwood Road; east and west of Crayton Road adjacent to the north side of the Penn Central tracks; and southeast of the intersection of Rudd Road and the Penn Central. All of the above wetland areas consist of moderate to dense stands of innundated red maple interspersed with aspen and hemlock. These areas are excellent habitat for woodduck and woodcock and should be preserved. They also provide storm water storage and pollutant assimilative benefits.

Response EPA-40:

Through consultation with Federal, State, and local resource, and regulatory agency personnel, the applicant developed a Fish and Wildlife Management Plan for the Lakefront site. The mitigative measures contained in this plan are described in Chapter Five of this Final Environmental Impact Statement. A map delineating onsite vegetative cover types and habitat management areas together with a discussion of wildlife resources is contained in Chapter Two of this Final EIS.

Two of the areas referred to in the above comment are located within the "primary impact area" for plant construction, but at this time are not slated for development. The area southeast of the intersection of Rudd Road and the Conrail tracks (formerly Penn Central) is situated within the designated habitat management area and would not be developed.

Wetland areas consisting of moderate to dense stands of inundated red maple interspersed with aspen and hemlock are indeed unique. However, red maple swamps tend to form on saturated or periodically inundated areas of depleted soils which other species cannot tolerate. These areas are usually of low Ph and nitrogen content causing them to be severely limited in productivity of soil dwelling organisms including most plants. Woodcock would find these areas of extremely low value especially during inundated periods since they usually probe into soil for their food. Wood ducks are most commonly found in dead woody swamps of low to moderate density and marshes with various life forms providing interpersion and cover. Ducks tend to be poor navigators in the air, so wooded areas of moderate to dense stands of red maple would represent a serious obstacle. However, inundated areas as described by the commenter, which are present during spring may be used as spawning areas for amphibians and especially tree frogs.

Comment EPA-41:

Refer to DA-1

Comment EPA-42:

Control techniques for fugitive dust should be defined. The possible relocation of dust prone areas downwind of Turkey Creek should be considered.

Response EPA-42:

In general terms, fugitive dusts from the process operations are to be minimized by incorporating control techniques to the maximum extent practicable. This will be accomplished either by enclosure of process unit and materials handling systems to prevent the escape of emissions, or by the installation of close coupled hooding to improve the capture of emissions that are generated by the process operations. Exterior areas giving rise to fugitive dusts within the plant will be controlled by water spray systems with appropriate chemical additives or will be seeded or covered by gravel if they are areas of limited activity.

Relocation of any individual area would require reconsideration of the design and layout parameters for the whole plant. Where modeling of fugitive dust transport indicated that fence line receptors could be adversely affected, such areas were, in fact, relocated.

Comment EPA-43:

Refer to DA-1

Comment EPA-44:

Refer to DA-1

Comment EPA-45:

Refer to COM-1

Comment EPA-46:

The alternatives should be compared for feasibility including both environmental and economic costs and benefits. These should encompass all major aspects of such plans.

For instance, the fundamental benefits of preserving or reconstructing a major environmental and recreational resource for the region as opposed to the total costs of the project. Who can, (and who should) pay for different elements of environmental maintenance and improvement? What would be ongoing costs and/or benefits and revenues?

It is also believed that the design and planning disciplines of landscape architects might contribute to the study at this stage, providing innovative and comprehensive methods to make one or more of the alternatives work for both steelmaking and environmental objectives.

Response EPA-46:

Through interaction with the various regulatory and resource agencies, the applicant has developed a Fish and Wildlife Mitigation Plan for the Lakefront site. The costs associated with the implementation of this plan would be borne exclusively by the U. S. Steel Corporation.

Comment EPA-47:

Comment warrants no response.

Comment EPA-48:

Refer to A-4

Comment EPA-49:

Page 2-7991 - Ohio WQS - Section 2.607 fails to identify the fact that special standards apply to Conneaut and Turkey Creek; both have been designated specifically as "Coldwater Habitat." This designation applies more stringent Water Quality Standards (WQS) for several parameters. Lake Erie WQS are also a special category.

Response EPA-49:

The fact that these two creeks are designated as "coldwater habitat" in Ohio was indicated on page 2.793 of the Draft EIS. However, both water courses are designated as warmwater habitat in Pennsylvania. The Ohio standards for coldwater habitats do not differ significantly from the proposed water quality standards in the Draft EIS.

Although this table does not list all of the parameters covered by the standards, it does include those considered to be the most important. For the 19 parameters listed, only temperature is more stringent for coldwater habitats. For coldwater habitats, the standard states. "At no time shall the water temperature exceed the temperature which would occur if there were no temperature change attributable to man's activities."

Comment EPA-50·

Page 2-793 - "Proposed" revisions of Ohio WQS were adopted at the State level and became effective on February 14, 1978. The remaining portions are undergoing revision by the Ohio EPA or promulgation by the USEPA.

Response EPA 50:

The comment is acknowledged and the text of this Final EIS has been modified accordingly.

Comment EPA-51:

Page 2-795 - Section 2.713 - While USEPA does not establish uniform national water quality standards, the Agency under FWPCA Amendments of 1972 and the Clean Water Act of 1977, is charged with ultimate responsibility for establishment of acceptable water quality standards in every State.

Response EPA-51:

The comment is acknowledged and the text of this Final EIS has been modified accordingly.

Comment EPA-52:

Page 2-815 - Table 2-340. According to Section 2.623, page 2-812, the average annual flow of Turkey Crek is about 0.28 m/sec. Why was it omitted from Table 2-340? Turkey Creek is a significant stream.

Response EPA-52:

Turkey Creek has been included in the above referenced table in response to the comment.

Comment EPA-53:

We recognize Conneaut Harbor as being extremely valuable to the Lake Erie fisheries. The environmental impacts of the proposed construction of a pier facility in Conneaut Harbor should be described in more detail. The applicant, while adequately describing the proposed solid fill pier, does not give a clear description of the aquatic environment within the Harbor. On page 5-44 the applicant describes certain zones of the Harbor as spawning and nursery areas. What species are present? How extensive of a spawning area is it? What substrate exists?

Response EPA-53:

It is acknowledged that Conneaut Harbor contains an ample fishery resource, however, the applicant's sampling data did not indicate the presence of an extremely valuable or unique fishery. Other nearshore areas outside the harbor were represented by higher numbers of species and total number of individuals, particularly ichthyoplankton.

Although spawning is known to occur in Conneaut Harbor, site specific habitat was not identified. The quality of habitat within the proposed pier site is not considered to be of extremely high value. Sediment samples indicate a prevalance of very fine silts and organics (grain size more than 70 percent $\leq$ .05 mm) with relatively high levels of oil. Submergent macrophytes are absent and anthropogenic debris abundant.

Ichthyoplankton sampling with nearshore sleds revealed the presence of freshwater drum eggs (9/1,000 m^3) and unidentifiable (554/1,000 m^3) eggs. Also found were eight species of larae of which 90 percent were unidentified minnows (6,864/1.000 m^3), and nearly seven percent carp (526/1,000 m^3). (See tables referred to in the above statement for details.)

Solid fill as originally proposed for pier construction is no longer being considered. Present plans call for the use of steel sheet pilings which would minimize displacement of existing aquatic habitat. However, it is acknowledged that increased harbor and shipping activity would place additional stress on the localized environment and further degrade the area as a fishery resource.

For areas outside the harbor, (i.e., intake/discharge structure) alteration of littoral zone and offshore habitat may temporarily inhibit and displace fishery habitat. However, the placement of riprap protection would likely provide a more favorable substrate/habitat than the flat (unprotected) bedrock and sand, and macrophyte devoid bottom which presently exits. Therefore, although some habitat would be altered, very little if any important spawning habitat is expected to be lost.

Comment EPA-54.

Refer to ADN-6

Comment EPA-55:

Refer to ADN-6

Comment EPA-56:

Refer to CRG-29

Comment EPA-57:

Conneaut Creek is of relatively high quality and a valuable coldwater designated stream in both States. Secondary development resulting from the project is expected to increase population in the watershed. The construction and/or expansion of wastewater treatment plants will have water quality impacts. A discussion of the impacts on Conneaut Creek should be provided including a discussion of potential impacts of discharges particularly with respect to dissolved oxygen levels, temperature and chlorination.

Response EPA-57:

The plant related secondary impacts were discussed in Chapter Four of the Draft EIS under the heading of "Secondary Impacts on Inland Waters." In addition, the pollution loads for several drainage basins including Conneaut Creek were also estimated. Among the list of parameters reported, plant related increases in BOD_5 were projected to increase from 0.1 to 0.6 percent over the 1981-1990 period. This small increase would have a negligible impact on dissolved oxygen (DO) levels.

The effects of plant related growth on temperature and residual chlorine levels were not estimated due to the lack of data from which such projections would be derived and the relatively small increases in all discharges anticipated for this basin. It is apparent however, that any new or significant increase in the discharge of municipal wastewater could result in some depletion of DO levels and an increase in temperature and residual chlorine levels.

It is also acknowledged that Conneaut Creek, specifically in its middle and upper reaches, may not have sufficient assimilative capacity to accommodate additional wastewater discharges. Such discharges could have an adverse impact on the cold water

fishery habitat during the summer months, although recent sampling results generally indicate that Conneaut Creek is not used by salmonids during this period. To mitigate these potentially adverse impacts, all such discharges should be routed to larger water bodies with a greater assimilative capacity.

Comment EPA-58:

Refer to DOC-1

Comment EPA-59:

Refer to DOC-1

Comment EPA-60:

Refer to DOC-1

Comment EPA-61:

A description of the dredging methods to be used in the pipeline and pier construction and deepening was not evident. The proposed methods must be included. Further, an analysis of alternative dredging and construction methods must be addressed. For example, an alternative method to dredging for the pipeline trench is the use of an underwater plow, which may be more economical than conventional dredging and may cause less resuspension.

Response EPA-61:

Although core borings have not been taken a preliminary bottom sampling has indicated the presence of bedrock near the surface of the lake bottom in the vicinity of both the pipeline and the pier construction. If these findings are substantiated during detailed design studies, then blasting will be necessary to break up the bottom, and a clamshell or dragline would be used to remove the material. Under these circumstances, alternative types of equipment, such as the hydraulic dredge, could not be used.

Regarding underwater plows, such devices have been successfully used for burying small diameter pipes and cables in suitable underwater environments. However, the technique does not lend itself to the large-diameter (6-foot and 8-1/2-foot) pipelines contemplated for the proposed plant water intake and discharge lines. Furthermore, if blasting is required, the utility of a plow would be very questionable.

Comment EPA-62:

Corrections

Page 2-1011. The second paragraph indicates that a 2°F increase "may have augmented water quality." This should be clarified.

Response EPA-62:

The text has been corrected in response to the comment.

Comment EPA-63:

Aquatic Baseline/Oxygen

Page 2-1012. The discussion of the anoxia conditions, as based on a credible scientific source, would nevertheless, be better presented by outlining the recent history of the hypolimnetic anoxia.

i.e., 1973 - 93%

1974 - 87%

1975 - 4%

1976 - 63%

1977 - 74%

Response EPA-63:

The data for the years 1976 and 1977 were not available at the time the Draft EIS was prepared. However, this information has been included in the discussion on the Lake Erie Central Basin presented in Chapter Two of this Final EIS.

Comment EPA-64:

Aquatic Baseline/Chemistry Data

The data in Table 2-414 are incorrect. The ammonia and phosphorus values are too low. The TKN values are either high or low, and many of the mercury values apparently are high. The data in Table 2-415 are much more reasonable. The problem is: Were the analyses done improperly the first time? If so, this may cast doubt on the validity of all of the chemistry data submitted by Aquatic Ecology Associates.

Comment EPA-67:

Aquatic Baseline/Guidelines

The Region V guidelines include field observations, elutriate testing, and macroinverterate analysis as well. Furthermore, the mercury and PCB guidelines in Table 2-415 are not cited correctly. If mercury or PCB's exceed the levels shown, the sediments are considered heavily polluted no matter what the other parameter concentrations may be. This is not made clear in the table. It is suggested that the entire Region V guidelines be included exactly as published to eliminate misrepresentation.

Response EPA-64, EPA-67:

The data contained in Table 2-414 concerning the May sediment sampling effort did contain a computational error for some of the TKN values and has subsequently been corrected. Regarding ammonia, phosphorous, and mercury values, the applicant rechecked the data and reported that there were no errors in methodology or computation. However, Corps staff notes that the values presented in Table 2-415 as opposed to 2-414 (both of which appeared in the Draft EIS) are more consistent with past USEPA sediment test results reported for this area. Thus, it is concluded that Table 2-415 may be more representative of baseline sediment conditions.

Comment EPA-65:

b) Elutriate tests should be performed on all of the samples. This is especially true for those in the areas of the pipelines, where the material may be rehandled twice (to dredge the trench, then to cover the pipeline).

Comment EPA-66:

Page 4-580 - part 4.491. The water quality quality of the dredging and blasting should be estimated - another example of the need for elutriate testing. "Dredged matrial will be deposited at a designated upland location" - where is this site and is the size suitable? A full discussion of the disposal site, possible alternatives, and environmental effects must be included.

Response EPA-65, EPA-66:

During the review of the U. S. Steel Corporation permit application, a technical team which included USEPA representatives was established to define environmental impacts and direct the applicant in the collection of the necessary environmental data. Water quality considerations and sediment analysis were among the issues discussed at various Technical Team meetings. At no time during these coordination efforts was any request made for elutriate testing. Additionally, the USEPA Region V guidelines entitled "Guidelines for the Pollution Classification of Great Lakes Harbor Sediments," dated April 1977, indicate that the value of elutriate test results are limited for overall pollutional classification and are generally used to influence decisions where bulk sediment results are marginal between two classifications.

Where dredging is involved, the sediment can be classified by use of bulk analysis since no important parameter was found to be in a range between classifications. Further bulk sediment analysis is supplemented by benthic macroinvertebrate data. Additionally, other recent projects involving open-lake disposal and dredging in Conneaut Harbor and Conneaut Creek have been reviewed by the USEPA, and for these projects, the requirements were for bulk sediment analysis, particle size distribution, and bioassay.

The U. S. Steel Corporation does not propose any open-lake disposal, but rather would use the dredged material for site grading or would confine the matrial in an upland dewatered facility. The exact location of the containment site for the dredged material would be determined during the site selection process for other solid waste disposal facilities. The material to be placed over the pipelines would consist of clean backfill.

Comment EPA-67:

Refer to EPA-64

Comment EPA-68:

The data in Table 4-275 should be presented in mg/kg dry weight to allow easy comparison with Region V guidelines.

Response EPA-68:

The table has been changed in response to the comment.

Comment EPA-69:

Section 4-407, "Shoreline Impacts" - Why is the statement made that the increase in shoreline erosion is only temporary? It has been mentioned that there are no plans to stabilize the shoreline and as long as construction and every day activity at the plant take place, shoreline erosion will always be greater than would be expected without construction.

Comment EPA-71:

Stabilization of the Shoreline Bluffs (Section 4-409) should be a priority After reading all related sections, it does not appear the bluffs will continue to erode at baseline conditions but will be accelerated due to plant construction and associated activities. If bluff erosion is accelerated, it will not only impact the shoreline but the site itself.

Comment PDER-13:

Shoreline bluff stabilization strategies must be presented in the final EIS. The lake bluff zone of the proposed facility site is the most critically eroding area of Pennsylvania shoreline. With the plans on page 4-488 for widespread vegetation removal, surface water runoff and infiltration will significantly increase, thus drastically increasing the mass wasting of lake bluff materials in this area. In addition, no mention is made of the impact to eastward lakefront areas, and particularly Presque Isle Peninsula as a result of this additional sediment load to the littoral drift. Or, conversely, if mitigative measures are taken to reduce the amount of erosion below what now is apparent, what effects this will have on eastward properties, especially Presque Isle, must be considered.

Response EPA-69, EPA-71, PDER-13:

Bluff erosion can be attributed to two factors: (1) waves and currents that attack the material at the toe of the bluff, and

(2) flow of water from the land to the lake, either over (sheet flow, small streams) or through (groundwater) the bluff. In either case, the eroded material is transported by waves and currents along the shoreline in an easterly direction. Transported material may accrete (deposit) at certain locations downdrift, where wave and current forces are diminished.

With the exception of the water intake and discharge pipes and the material conveyor from the plant, no construction is planned along the bluff itself. However, in those areas where construction does occur, some localized bluff erosion can be expected prior to placement of suitable erosion protection material.

The plant area will be separated from the shoreline (except where construction is planned along the bluff itself) by an undeveloped strip of land ranging in width from 75 feet to more than 300 feet. As a result of clearing and grading of the plant area, surface runoff is expected to increase during construction. Increased runoff could result in greater erosion of the small streams that flow from the plant area, through the bluff and into the lake. The applicant has agreed to apply the principles and procedures of a Pennsylvania erosion control plan to the entire Lakefront site. Thus, runoff from the construction area is expected to be properly channeled so that no significant bluff erosion results.

Except for this limited construction, there would be no modification of the bluff faces themselves during plant operations, so erosion rates are expected to remain at or near baseline levels. The anticipated control is based on the assumption that the final plant drainage system will have adequately designed outfall structures. Further, erosion due to sheet flow over the bluff face would be expected to decrease as surface waters are collected and discharged through established drainage systems.

Any accelerated onsite bluff erosion ocurring during the construction or operations phases would have no adverse impact on beaches and bluffs east of the site. In fact the influx of sand to the littoral system could actually aid in the building of beaches and the protection of the bluffs to the east of the Lakefront site.

The applicant estimates that a major bluff stabilization plan at the Lakefront site could reduce the longshore transport to Presque Isle by as much as five percent or 2,500-2,750 m^3/yr. This reduction is relatively small when compared with either the rate of transport along Presques Isle (95,000-215,000 m^3/yr) or the average rate at which artificial beach nourishment has occurred over the past 20 years (77,200 m^3/yr) excluding the 1956 feeder beach which would increase the annual average to 216,000 m^3/yr. The anticipated downcurrent impacts associated with shore stabilization are summarized in the table below.

The reviewers are again reminded that bluff stabilization is not a part of this Department of the Army permit application. Should the U. S. Steel Corporation determine at some point in the future that shore protection measures are needed, they will be required to submit a Department of the Army permit application.

Comment EPA-70:

The subject of impervious surfaces was mentioned briefly, however, it is felt that subject should be addressed more adequately. With 80% of the site area containing highly erodable soils and with 1,300 acres of this land being involved in construction activities, the increase in impervious surface will significantly impact the already erodable soils. It is not sufficient to just say increases in runoff will result. Calculations should be made to predict the increases in runoff associated with the increased impervious surface and subsequent increases in erosion that can be expected.

EPA-70:

Under current baseline conditions, the project site is relatively flat and covered primarily with vegetated, impermeable soils. The site is cut by several steep-banked streams. Although the impermeable soils have a limited ability to absorb rainwater, runoff flows tend to be slow due to both the low relief of the site and the presence

of vegetation. Pooling is common and evaporation plays a significan e in the water movement regime. Soils on the site are generally classified as igh erosion potential, however, slow runoff flows and the presence of protective vegetation generally prevent this potential from being realized. Conditions along the steep stream banks are an exception particularly during periods of heavy runoff when moderate to severe stream bank erosion occurs.

After the plant is in operation, the developed areas of the site would be covered by buildings, pavements, crushed slag surface, and revegetated or landscaped areas. Runoff from these developed areas would be directed into a drainage system consisting of storm sewers and holding basins for eventual discharge to drainage ditches, tributaries, or Lake Erie. The applicant has indicated that standard practices would be used in designing the grading, layout, and drainage of the site. Therefore, runoff from the paved, built, or slagged areas is not expected to drain into revegetated or landscaped areas. The applicant has indicated that runoff from developed plant areas would be impounded and treated as necessary to meet the water quality standards.

It is not known at this time whether the total runoff from the developed plant areas would increase or decrease during the operations phase as a result of the development. The overall change would depend primarily on the difference in permeabilities between the crushed slag surface and the original vegetated but relatively impermeable soil. Peak runoff flow rates would be controlled at the outlet of the holding basins and are therefore not expected to increase over baseline conditions. Projected runoff flows from the site were calculated and shown in Table 4-291 of the Draft EIS.

Erosion in the developed plant areas is expected to be reduced due to the protection provided by crushed slag. In the undeveloped areas, surface erosion is expected to remain at baseline values since drainage will basically continue as under baseline conditions. Possible increases in ditch bank or streambank erosion are very case-specific and difficult to predict. However, the applicant has indicated that the drainage system (including ditches and discharges to other waterbodies) would be properly designed to minimize erosion.

Comment EPA-71:

Refer to EPA-69

Comment EPA-72:

Chapter 1-273 - This section on "Shoreline Protection" states that some type of erosion protection will be required but the type or quantity has not been determined. It is also stated that such information will not be available until the detailed design for the proposed plan is worked out. A discussion of alternative plans for shoreline protection is both warranted and necessary at this time.

Response EPA-72:

The applicant plans to install shore protection only in those areas where the intake and discharge pipelines are brought on shore. However, if extensive shoreline stabilization is deemed necessary, the following methods could be employed.

- Straight-Wall Bulkhead. The shoreline would be protected by continuous vertical steel sheet piling or a concrete wall. Due to the presence of bedrock near the water level elevations, a tie-back system would probably have to be employed for sheet piling. Weep-holes or other provisions for drainage would also be required.

- Cellular Bulkhead. The shoreline would be lined by steel sheet pile cells, cylindrical in shape and open on the top and bottom. The cells would be filled with rock, spent refractory, or slag. Weep-holes or other provisions for drainage would be needed.

- Revetments. The shoreline would be faced with concrete or stone to prevent erosion. Large pieces of stone (riprap) pre-cast concrete shapes, interlocking concrete panels, or cast-in-place concrete pavement could be used. The revetments would be sloped to the water (the slope on riprap is generally 1.1-1/2 or 1.2).

The reviewer is again reminded that this Department of the Army permit application does not include extensive protection of the shoreline fronting the Lakefront site. Further, the applicant has not expressed any desire to protect the shoreline either now or in the foreseeable future.

Comment EPA-73:

There appears to be a contradiction in Section 4.411. The Section states, "When development reaches a stable level, average erosion rates in these areas would likely drop below original values as a result of the protective presence of pavement and structures." Two sentences later the Section states, "The removal of vegetation during construction and the paving and developing of land tends to increase volume of runoff and therefore greater overland flow, erosion would be increased in those areas not covered by impervious surfaces."

Comment EPA-74:

Section 2-542, Erosion - The calculation of the average annual erosion rate and how it is applied is questionable. A majority of the numbers used to determine the erosion rate is not explained. For example, 1) What does the number 1.13×10^{-4} represent and where did it originate? 2) There is no explanation given as to how runoff coefficients and sediment delivery ratios are determined. 3) Intensity of rainfall, which is one of the most important agents in erosional processes, is not even mentioned. Also, as stated in the section, the erosion rate of 135 tons/acre-year is approximate. To apply this number to all 8 drainage basins each having varying geology, topography and land use is unquestionably inaccurate. These numbers should not be used unless more clarification is presented.

Comment EPA-75:

Urban land use should be considered in this section because there will be greater runoff associated with the increase in impervious surface and therefore greater potential for erosion once water reaches uncovered land or streams.

Response EPA-73, EPA-74, EPA-75:

Surface erosion rates are not expected to increase as a result of secondary urban development (once such development reaches a stable level). Pavement and structures will protect much of the developed land. Increased runoff flows will tend to be channeled into a planned drainage system as required under most local subdivision regulations. Thus, surface erosion is not expected to increase. Streambank erosion however, may well increase due to increases in runoff flows.

It is important to note that there is a distinct difference between the terms erosion rate and sediment loading rate. Rainwater removes the surface of the soil as it flows overland and the average rate of removal is known as the erosion rate. It is a measure of the erosion forces on the land and is commonly reported in tons/acre-year. Sediment removed in this fashion may be deposited in flat or vegetated areas where flow velocities are reduced. Only a fraction of the sediment eroded within a given drainage basin would actually be lost from the area by stream transport. This nondimensional fraction is known as the sediment delivery ratio and its magnitude is primarily a function of the size of the drainage basin under consideration. If the erosion rate is multiplied by the sediment delivery ratio, a sediment loading rate is obtained. The sediment loading rate expresses the rate per acre of upstream drainage basin land, which a stream carries as sediment out of the area. Like the erosion rate, the sediment loading rate typically has units of tons/acre-year. However, unlike the erosion rate, it is a measure of the impact of eroded sediment on receiving water bodies.

Baseline erosion in each drainage basin was estimated by multiplying the average erosion rate (originally estimated at 1.35 tons/acre-year; currently estimated at 1.2 tons/acre-year) by the number of acres of nonurban land in the drainage basin. The varying geology, topography and land use in each drainage basin were not accounted for by further disaggregation. The scope of this impact analysis and the inherent potential for a large margin of error when calculating regional erosion rates, regardless of degre of factor differentiation, precluded justification for a massive data collection effort particularly since it would not improve the accuracy of the estimate. The updated erosion rate estimate of 1.2 tons/acre-year is based on stormwater flow data from an upstream area of the Turkey Creek drainage that was judged to be reasonably representative of the areas draining "nonurban" land in the region. Sediment concentration were observed to be on the order of 250 mg of total suspended solids per liter of water. Using an estimate of the average annual volume of runoff per acre, it was possible (employing a sediment delivery ratio) to estimate the average annual mass of sediment lost per acre. The sediment delivery ratio used (.25) was that appropriate to the upstream Turkey Creek drainage basin area of approximately 3.5-4.0 square miles. The average annual volume of runoff per acre was calculated from the average annual precipitation (35 inches) through the use of a runoff coefficient, here estimated to be 0.3. The revised calculations are shown in paragraph 2.542 of this Final EIS.

In general, however, baseline erosion rates are expected to be slightly higher than average in those drainage basins containing a large proportion of hilly or agricultural land (e.g., Drainage Basin 2 or Drainage Basin 4). Urban area erosion tends to be streambank as opposed to surface erosion, and in most of the eight drainage basins studied, is relatively insignificant. Urban land was estimated from topographic maps to constitute 22 percent of the total land area in Drainage Basin 3 and 10 percent in Drainage Basin 8, the two most urbanized drainage basins. In these drainage basins, the baseline erosion may be underestimated by a small percentage. Therefore, the projected erosion-impacts expressed as a percentage of the underestimated baseline erosion estimates, appear to be greater than they actually are relative to the actual baseline erosion rates.

It is acknowledged that the methodology for determining erosion rates involves considerable uncertainty, since it incorporates rough estimates (based on reported values for similar areas) for the runoff coefficient, erosion rates, and the sediment delivery ratio. Since rainfall intensity affects the suspended solids concentration in Turkey Creek stormwater flows, rainfall intensity was implicitly accounted for.

Comment EPA-76:

Refer to CRG-41

Comment EPA-77:

The applicant should identify the maximum potential for the site in terms of steel making at least to the year 2020. This would provide some insight into what may ultimately happen to the area.

Comment FWS-71:

According to paragraph 6.113, the applicant considers changes to plant layout unacceptable because they "...will preclude future plant expansion..." This line of reasoning is inconsistent with assurances in the SUMMARY (items 3(A)(3) and 3(B)(3)) that although 1,290 acres would be developed, the remaining 1,500 acres of the site would not be altered.

Comment PHCOE-4:

"A full public disclosure by U.S. Steel as to all of the possible expansion plans at the proposed site in addition to a complete examination of all possible ancillary industrial construction accompanying this construction of the proposed mill has been slyly omitted from this hastily contrived Environmental Impact Statement."

Response EPA-77, FWS-71, PHCOE-4:

The applicant has indicated that there are no plans at this time for expansion of the proposed Lakefront plant. Since facility economics cannot be determined until full production capacity levels are achieved and maintained for some extended period of time, it is impossible to project whether or not future enlargement would be feasible. Further, any plans for expansion would also be dependent on prevailing market conditions at that time.

Further expansion at some point in time may become realistic. However, any plans developed by the applicant would probably be subject to an environmental review analogous to that one that is presently underway for the proposed Lakefront plant.

Comment EPA-78:

Refer to ADN-1

Comment EPA-79:

There is general discussion, in Sections 1,414 through 1.422 of Volume 1, regarding the requirements of the EPA emissions offset policy. However, in none of the Volumes is there adequate discussion as to how U. S. Steel plans to obtain the necessary emissions offsets. Specifically, the area in which the proposed Lakefront plant is to be located is a non-attainment area for ozone. Non-methane hydrocarbons (NMHC) are major contributors to the ozone air quality levels. The Lakefront plant has been determined to be a major source of NMHC. Therefore, NMHC emission offsets must be obtained to more than offset the NMHC emissions resulting from the operation of the U. S. Steel Lakefront plant. There are alternative measures (stationary source controls, transportation control plans) which may be implemented to obtain the necessary NMHC emission offsets resulting from the operation of the Lakefront plant. The Environmental Impact Statement should discuss what measures will be taken to assure that acceptable and approvable NMHC emission offsets will be obtained for the proposed Conneaut project. Further, this section should include how U. S. Steel will comply with all other conditions of the December 21, 1976 Interpretative Ruling and Section 129 of the 1977 Clean Air Act Amendments.

It is stated in the document "the entire State of Ohio has been determined to be a non-attainment area for oxidants by the U. S. EPA." This is not true. However, Ashtabula County has been designated non-attainment. The high ozone levels measured at the proposed site are supported by the 1977 Conneaut data. There, 255 observations (3.6% of the total) on 60 different days exceeded the standard. These high levels indicate that the construction of a steel plant with its attendant hydrocarbon emissions from coke ovens would be inadvisable (if not illegal) unless satisfactory offsets can be effected. Section 110(a)(2)(I) of the Clean Air Act states that, for a State Implementation Plan to be approved,"...after June 30, 1979, no major stationary source shall be constructed or modifed in any non-attainment area (as defined in Section 171(a) to which such plan applies, if the emissions from such facility will cause or contribute to concentrations of any pollutant for which a national ambient air quality standard is exceeded in such area, unless, as of the time of application for a permit such plan meets the requirements of part D (relating to non-attainment areas)."

Response EPA-79:

The applicant is cognizant of the fact that the Emission Offset Policty (EOP) of Interpretative Ruling of 40 CFR 51-18 apply to the proposed facility. These requirements include application of Lowest Achievable Emission Rate (LAER) control technolgy and a greater than one-for-one emission offset from existing sources. Prior to any approval by the USEPA, the applicant and/or appropriate State agencies must provide plans for obtaining these offsets. The States are presently revising their implementation plans to indicate their policies for achieving attainment. At this point in time, the applicant has not sought a PSD permit nor have determinations about specific amounts and locations of the offset emissions been determined. Until such time as the specific amounts and locations of offsets were determined, and the States have formulated their specific plans for attainment, the applicant does not believe that it can define measures to be taken. Resolution of these matters will be accomplished in the future through the air quality permit reviews.

The text of Chapter Two was in error by stating that the entire State of Ohio has been determined to be a nonattainment area for oxidants and has changed accordingly.

Comment EPA-80:

Ambient air quality standards are exceeded at numerous locations in Ashtabula and Erie Counties. Maps indicating all nonattainment and PSD Class I areas should be provided in the document. These locations and site codes are needed to properly evaluate the background data.

Response EPA-80:

There are no Class I areas within the regions indicated on the maps. The nearest Class I area is in the State of West Virginia, approximately 200 miles from the proposed site, and no impact is expected at any Class I areas. Maps of nonattainment regions are not presently available. Additionally, maps of this type would not provide any useful information since AQCRs are frequently described as nonattainment, when, in fact, the actual area experiencing adverse air quality is a small fraction of the total area of the AQCR. The Northwest Pennsylvania-Youngstown Interstate AQCR, which covers the whole region of interest, is nonattainment for particulates because of localized areas in Ashtabula and Erie that exceed standards. These areas can best be estimated from the secondary baseline modeling in Chapter 4, which clearly indicates the localized nonattainment zones. For this reason, the USEPA has agreed that Conneaut and the plant site are attainment areas. The secondary analysis clearly indicates that the localized areas exceeding standards would not be significantly affected (annual increments are less than one ug/m^3 in Ashtabula and Erie).

Comment EPA-81:

2-735 - The sections describing the Environmental Research and Technology Air Quality Monitoring Program (starting at Sec. 2.581) should clearly state near the beginning of the discussion what time period was monitored. This period is only indirectly alluded to for particulates in paragraph 2.585. We are left to assume SO_x NO_x were monitored during the same time span.

Response EPA-81:

The Environmental Research and Technology Air Quality Monitoring Data reported in the Draft EIS covers a five-month period. The number of observations for each pollutant and each time average during that five-month interval was shown in the baseline frequency tables in Chapter Two. Data covering a 12-month monitoring period are now available and have been included in this Final Environmental Impact Statement.

Comment EPA-82:

4-735 - The Concentration for all air pollutants should be expressed in ug/m^3, paragraph 2.580 as well as Tables 2-317.

Response EPA-82:

The text and tables have been modified in response to the comment.

Comment EPA-83:

2-742 through -755 - With respect to tables and figures, submitting appropriate labeling is necessary. Units, scales, and choice of proper/consistent system (metric) are desired. Sufficient information needs to be provided on each figure and table to permit its assessment. Where monitoring data are submitted, the period of observations, percent capture of reported data should be included as well as identification of units of measurement and reporting.

Response EPA-83:

The text and tables have been modified where appropriate in response to the comment. In addition, monitoring data from the Lynch Road and Route 20 stations covering a one-year period, have been included in this Final Environmental Impact Statement.

Comment EPA-84:

For analyses based on monitoring periods of less than a year s duration, justification for the use of such limited data should be presented. It appears that in many cases, the percent capture of monitoring data is less than 75%, particularly for data from the Lynch Road site. Documentation of precisely what model options and input parameters were used (in preference to appended copies of general model descriptions alone) should be described.

Response EPA-84:

Data covering a 12-month monitoring period is now available from the ERT Air Quality Monitoring Program and is included in Chapter Two of this Final EIS. These data are generally consisent with assumptions made from the monitoring data of less than a year's duration. In most cases the percent capture for the year-long monitoring project improved considerably compared with the initial five-month period.

The models chosen, the options, and input parameters used were made after mutual agreement at meetings with representatives from EPA Regions III and V. Documenting the options and input parameters in the main text of the statement would unnecessarily add to the length of this document and make the analysis of the environmental impact more difficult. However, the information requested is available for inspection at the U. S. Army Engineer District Office in Buffalo, NY.

Comment EPA-85:

2-756 - This section tries to relate all high TSP levels to emissions from Ashtabula Power Plant. Some discussion should be made concerning high TSP levels in the vicinity of the Ashtabula Power Plant and any additional impact that can be attributed to the operation of U.S. Steel, Conneaut.

Response EPA-85:

The baseline section in the DEIS indicates that high TSP levels during the monitoring period were due to a combination of emissions from the Ashtabula Power Plant and to fugitive emissions from construction activities by the Bessemer and Lake Erie Railroad. However, the Power Plant will be subject to 90 percent control by 1981, and the railroad construction is temporary. The baseline section indicated that the consequent reduction in emissions at the two facilities would cause considerably lower ambient background TSP readings at the Conneaut monitors. The subsequent 12 months of TSP readings reported in the Final EIS confirm the assumption concerning the temporary construction activity.

The high TSP levels in the vicinity of the Ashtabula Power Plant were due to a number of localized sources in the city of Ashtabula, approximately 13 miles from the Conneaut site. Except for the power plant, none of these sources would be major contributors to ambient levels in Conneaut.

The isopleth plots in Chapter Four for particulates in the Regional Study Area show that the proposed plant will have no significant impact on the high levels in Ashtabula.

Comment EPA-86:

Page 4-495. During raw material transfer from lake self-unloaders and lake carriers, the material will be delivered to receiving hoppers before being transferred to storage piles. The applicant does not state whether the emissions at the receiving hoppers are controlled.

Response EPA-86:

The material handling procedures employed would be controlled to the maximum extent practicable. Resultant fugitive emissions have been calculated to be 1.5 kg (3.3 pounds) per hour for iron ore and 0.7 kg (1.5 pounds) per hour for limestone. These emissons have been accounted for in the atmospheric dispersion modeling. The impact on local ambient air quality has been quantified and shown not to cause any violation of air quality standards.

Comment EPA-87:

There is no mention as to whether U. S. Steel or its subsidiaries located at this site will be shipping raw materials by lake carriers to customers. If so, an explanation for the control of loading emissions is necessary.

Response EPA-87:

The applicant will not be shipping raw materials from the proposed Lakefront steel mill. The Pittsburgh & Conneaut Dock Company, a subsidiary of United States Steel Corporation, now operates a receiving and storage site at Conneaut Harbor for the transshipment of waterborne ore by rail to inland steel plants and railborne coal from inland mines by ship to Canadian and domestic customers. This facility operates independently and does not depend on the construction and operation of the proposed Lakefront plant for its future existence. However, the loading emissions generated by this operation have been considered as part of the area background particulate concentrations.

Comment EPA-88:

Page 4-495, paragraph 4.419. The maximum TSP annual fence line concentration from the CDM model is 5.0 ug/m^3. The text states that the additional five ug/m^3 from the plant would not cause the secondary (annual) standard of 60 ug/m^3 to be exceeded. Table 2-316 shows a geometric mean for TSP of 53.58 ug/m^3 at monitor number 6, located in Conneaut, Ohio. The total of 58.58 ug/m^3 annual value is too close to the annual secondary NAAQS (Primary, Ohio) to make that statement.

Comment KEE-7:

Proponents of the Lakefront Plant are quick to point out that particulate emissions from the plant would not affect the City of Erie. While Erie City and parts of Ashtabula County are nonattainment areas for particulates under NAAQ standards, the particulates from the mill would generally not enter the Erie City Air Basin. I would like to point out that while the particulate emissions would not violate the standards, they would come close to doing so. Background for particulates in the area of the site is 51 micrograms per cubic meter (ug/m^3). The steel mill would add another five ug/m^3 for a total of 56 ug/m^3. The standard for the area is 60 ug/m^3. I think you can see that the air in our region is not particularly good, the mill would make it worse, even if it did not exceed the standards.

Response EPA-88, KEE-7:

The maximum off-site annual increment of five ug/m^3 occurs no farther west than Broad Street in Conneaut (UTM east = 536.9) while the monitor which recorded an annual mean of 53.6 ug/m^3 is at 770 Lake Road (UTM east = 535.2), 1.7 km east of the five ug/m^3 isopleth. The predicted impact at the monitor site is 3.5 ug/m^3 resulting in an expected concentration of 57.1 ug/m^3. The plant impact drops off fairly rapidly west of the plant site, while the Conneaut particulate hot spot is also quite localized, with observed annual mean concentration falling 13 ug/m^3 over a distance of three km from monitor 6 to monitor 7, which is near the southwest corner of the plant. Thus, the model predicts lower baseline concentrations at the point of maximum impact than the 53.6 ug/m^3 observed at 770 Lake Road. Recently completed date at the Route 20 ERT monitor site indicated an annual geometric mean concentration of 46 ug/m^3.

The above data indicate a greater margin of safety than that estimated in these comments.

With respect to particulates, the air in Conneaut can generally be considered as moderately good. The values presently are less than the secondary standards and are well below the primary standards.

Comment EPA-89

4.508. Paragraph 4.425 indicates that the second highest TSP level was observed on day 127 (May 6) and was 129 ug/m^3. NMAF produced a maximum value of 15 ug/m^3 for

that day. Total concentration was then 144 ug/m^3. There is no description of the meteorology for day 127 nor at which monitor the value of 129 ug/m^3 was observed. Since Ohio's primary TSP standard for 24 hours is 150 ug/m^3, the value of 144 ug/m^3 constitutes a situation very close to violation of the Ohio SIP. It should be noted that 1976 24-hour maximum TSPO values for Ashtabula County, Ohio were 244 ug/m^3 at site (1) (violation), 150 ug/m^3 at (4) (violation), and were as high as 135 ug/m^3 at Site 6 and 140 ug/m^3 at Site 7.

Response EPA-89:

The TSP value of 129 micrograms per cubic meter occurred on Julian day 127 at the monitor in the city of Conneaut on 770 Lake Road This station is the State-operated monitor located closest to the proposed site that accumulated at least one year of data.

On day 127, the winds began from the south and west early in the day and later shifted to the north and northeast. The most outstanding parameters to be noted on that day were the high hourly average speeds, reaching as great as 10.3 meters/second or 24 miles per hour. The high wind speeds along with the occasionally occurring low boundary layer during onshore winds would indicate that low level sources probably influenced the monitor reading. The presence of nigh winds would indicate that wind erosion and fugitive emissions from nearby ground-level sources might be the major contributors. Receptor Number 4 was the maximum receptor on that day in the RAMF modeling of the proposed plant. Its location is approximately three kilometers from the Conneaut monitor that recorded the value of 129 micrograms per cubic meter. For day 127, the impact of the proposed plant on the monitor at site Number 6 is considered to be insignificant. It is difficult to determine the expected second highest background level at the area bordering the proposed plant site (receptor Number 4) based on the State 1976 monitors. However, the ERT onsite monitors (in 1977-1978) indicated that the background levels at these bordering receptors were generally lower than at the monitor in downtown Conneaut. The value on day 127 at receptor Number 4 bordering the proposed site would therefore be expected to be lower than the observed reading of 129 micrograms per cubic meter at downtown Conneaut and the expected total concentration would be less than 144 micrograms per cubic meter.

The high monitor values for Ashtabula County that occurred at Sites 1 and 4 were in the city of Ashtabula, approximately 12 miles away. These monitors were apparently influenced by nearby sources. The impact of the proposed plant on these monitors is considered insignificant.

Comment EPA-90:

4-493 - "The ambient air quality standards would not be violated during the construction phase if proper dust suppression methods are implemented."

The EIS states that wet spraying will reduce dust emissions in the construction area by 50%. Some justification should be made for this percent reduction.

Response EPA-90.

The justification that wet spraying in the construction area would reduce emissions by 50 percent is derived taken from USEPA Publication AP-42 "Compilation of Air Pollutant Emission Factc " 3rd edition, August, 1977, Section 11.2.4 in Heavy Construction Operations Part . .4.4--Control Methods, which references an earlier USEPA Contractor's Report, Publication EPA-450/3-74-036a, June 1974.

Comment EPA-91:

4-494 - The discussion repeatedly (Sections 4.416, 4.419, 4.421, 4.425, 4.660) intimates that secondary particulate standards are being met at the proposed site. Thus, the monitoring study results described in Volume 2 are ignored. The data showed violations at two sites (one each) of the 24-secondary standard during the five-month study period. One of these, the excursion at the Route 20 site, could possibly be explained by the discussion on page 2-756. However, the other excursion cannot be dismissed. The probability of at least one more occurrence of levels greater than 150 ug/m^3, if a full year's measurements had been taken, is very great.

Response EPA-91:

There was only one excursion at one site. The other site had a reading of exactly 150 ug/m^3. As explained in Chapter Two of this EIS, both high values are related to the combined contribution of fugitive dust from nearby construction and emissions from the Ashtabula power plant (subject to 90 percent control by 1981). Data collected over a 12-month period are now available for each onsite monitor and have been include in this Final EIS. Since the Draft EIS was issued, a full year's date has been collected at each onsite monitor. The results indicate that no new excursions have occurred. These data also show that the annual geometric means for the Route 20 and Lynch Road sites were 46 and 39 ug/m^3 respectively, considerably lower than the five-month geometric means of 56 and 48 ug/m^3 that were reported in the Draft EIS.

Comment EPA-92:

In paragraph 4.423, it is stated that the maximum TSP concentration of 29.99 ug/m^3 for Receptor #4 was due to a six day episode. The RAMF printout confirms this. It should be noted that Page 12 of Appendix D7 states that because of difficulties with light winds, daily concentrations for such periods may be underestimated. Hence, the highest concentrations might be considerable greater.

Response EPA-92:

The episode in question was a four-day, not a six-day episode. The steady-state Gaussian plume RAM model will tend to underestimate during stagnant conditions with light winds that are variable in space and time: Polluted air tends to return to a receptor instead of being removed downwind. However, this was not the situation during the four-day episode in question. Winds were highly persistent (constant in time) on days 61 and 62, the days of maximum concentration. The winds observed at the Perry's Bluff (onsite) meteorological station were well correlated with winds at Erie Airport, suggesting that the wind field was uniform over the region of interest. The average wind speed during the four-day period was 4.76 m/sec (10.3 mph), which, in air pollution meteorology, would be appropriately classified as moderate winds. Only day 63, with a mean wind speed of 2.8 m/sec, a resultant speed of 1.4 m/sec, and a persistence of 0.406, is probably representative of the type of meteorological conditions for which the RAM caveat (i.e., light, variable winds) is meant to apply and therefore, a day on which the projection could be an underestimate. The maximum increment predicted on that day was 23.6 ug/m^3. Even if this value were an underestimate, it is reasonably below the allowed increment of 37 ug/m^3.

Comment EPA-93:

2-541 - Has the figure 32 ug/m^3 for the background concentration of particulates been generally accepted by the regulatory agencies? The studies should be referenced and discussed in more detail.

Response EPA-93:

The background TSP concentration relates to the ambient level that is not accounted for by the emissions inventory since the inventory was input to the model. Presumably this inventory would include all sources in the three-county region but would not include long-range transport of particulates from surrounding regions. The inventory also would not include wind erosion of dust. However, it does include area source emissions from population centers by incorporating Emission Density Zoning. Therefore, the background should account for levels that are due to only a few sources.

Choosing a background based on a rural monitor in the AQCR may not be representative of the entire region and may be no more accurate than selecting one based on levels exclusive of the modeled inventory. The background input to the model could range from 30 to 38 ug/m^3 depending on location. The value chosen (32 ug/m^3) causes the calculated baseline ambient concentrations to agree well with the monitor values. The implication from the baseline particulate isopleth plot in Chapter Four is that the value chosen allows for a reasonably accurate calculation of the observed values.

Comment EPA-94:

The EIS states that lake breeze fumigation is not a critical incident in the proposed plant air quality analysis. This conclusion is hard to accept knowing the problems of lake breeze fumigation present in and along the southern portion of Lake Michigan.

Comment PDER-1b:

Property line receptors were also used in the analysis of the effect of lake breeze fumigation. The Bureau of Air Quality's meterological section feels that the maximum concentrations caused by lake breeze fumigation would be at 12 to 20 km downwind. Therefore, the projections in the Draft EIS may not represent the highest concentrations.

Response EPA-94, PDER-1b:

The lake breeze fumigation phenomenon was modeled by utilizing the computer program AQSTM. In the program, the stability class below the thermal interval boundary layer (TIBL) was input to the model and one was input to the model above the boundary layer. The shape of the boundary layer was described in terms of horizontal and vertical coordinates. Several boundary layer shapes were incorporated into the multiple runs of AQSTM, and the conservative worst case impacts were considered. The boundary layer shapes were indicated by using measurements made by Lyons in his work on Lake Michigan, (Turbulent Diffusion and Pollutant Transport in Shoreline Environments, W. A. Lyons, Lectures on Air Pollution and Environmental Impact Analysis, American Meterological Society, 1975), and the program considered TIBL's formed by land/lake temperature differences as well as TIBL's resulting from onshore synoptic winds during spring and summer.

AQSTM considers each source after plume rise and uses a Lagrangian interpolation formula to solve a fourth degree equation describing a segment of the boundary layer. It then determines the relationship of each source to the boundary layer. If the plume is below the TIBL then plumb trapping is considered, and unstable atmospheric conditions are utilized in characterising the source dispersion. If the plume is above the TIBL, then stable conditions are utilized in the dispersion until intersection with the TIBL; fumigation is assumed to occur at the intersection.

Examination of the proposed plant emissions inventory indicates that for both sulfur dioxide and particulates the major sources, such as sinter plant exhausts, are at relatively low levels (approximately 50 meters) with low temperatures (55°C). The plume rises are therefore not great. Consequently, practically all of the sources are subject to plume trapping in the unstable layer below the TIBL and were modeled as such in AQSTM.

During onshore wind conditions, the nearest receptors are approximately three kilometers from the sources, thus permitting considerable dispersion in the unstable trapping layer. The concentrations from trapping were therefore not the maximum calculated values at the nearest receptors. The ambient concentrations from the few sources that were subject to fumigation after penetration of the boundary layer were small because they had relatively low emission rates.

The assumption that fumigation would occur 10 to 20 kilometers inland, would not apply to the proposed Lakefront plant. The TIBL height ranges indicate that the few sources that advect above the boundary layer would fumigate at distances much closer to the site.

Careful examination of the model runs shows that highly persistent winds during stable atmospheric conditions near the ground led to much greater ambient concentrations than fumigation. This meteorolgical phenomenon, therefore, is not the critical incident when determining maximum impacts.

Comment EPA-95:

Page 2-735, paragraph 2.580. The statement is made that monitoring data indicates that Ashtabula and Erie Counties are attainment areas for both SO_x and NO_x. However, Table 2-315, monitor (4), still show a max-24 hour value of 1087 ug/m^3. This would imply a violation. These facts should be verified.

Response EPA-95:

The value of 1,087 ug/m^3 SO_2 was improperly identified in the Draft EIS as a 24-hour maximum value. It is a one-hour maximum value. During 1976, the 24-hour maximum SO_2 value for Ashtabula was 231 ug/m^3. The above referenced table has been revised accordingly.

Comment EPA-96:

Paragraph 4.428 indicates the maximum 24-hour SO_2 concentration for the City of Erie occurred on day 163 and was calculated to be three ug/m^3. However, there is no mention of the background value for that day.

Response EPA-96:

The maximum impact of the proposed plant on the city of Erie (3 ug/m^3) was determined to be insignificant, therefore background levels were not determined for that day.

Comment EPA-97:

It is indicated in paragraph 4.429 that the highest SO_2 hourly concentration for day 146, hour 20 was 536 ug/m^3. On page 133 in Appendix D8 of the Environmental Assessment, a high SO_2 value of 541.36 ug/m^3 for May is shown. This discrepancy should be clarified.

Response EPA-97:

Information reported in the draft EIS was in error and the correct value for SO_2 on this date should have been 541 ug/m^3 rather than 536. The text of the statement has been altered in response to the comment.

Comment EPA-98:

Table 1-67, page I-351 should show the 24-hour maximum, Class I. sulfur dioxide level at 5 ug/m^3.

Response EPA-98:

The above referenced table has been corrected in response to the comment.

Comment EPA-99:

Page 4.739, Table 4.318. This table is not consistent with impact concentrations as given in earlier sections. Example:

SO_2	Table 4.318	Section
Background		
24-hour max.	80-110 ug/m^3	4.428 = 106 ug/m^3
Annual mean	29-45 ug/m^3	4.420 = 27 ug/m^3
Worst case	80 ug/m^3	4.428 = 83 ug/m^3

It is recommended that NO_x isopleths be shown in a similar manner as the annual inputs of SO_2 and TSP.

Response EPA-99:

Revisions have been made in the table and appropriate sections of the text to remove the inconsistencies contained in the Draft EIS. The values of SO_2 24-hour maximum

given in paragraph 4.428 of the Draft EIS are within the range of values in Table 4-318.

NO_x ispoleths similar to those included in the Draft EIS for SO_2 and TSP are not available. Since the NO_x concentration plus the plant's increment at the critical receptors, was consistently less thane one-half of the Primary National Ambient Air Quality Standard, the applicant did not consider multi-receptor plotting to be necessary. However, it is EPA's perogative to request preparation of the isopletns if they are deemed necessary for the PSD review.

Comment EPA-100:

4-506. Based on monitor data at the proposed site, the annual SO_2 background value of 27 ug/m^3 is proposed. Since the ERT study on site was for a period of 5 summer months, how was 27 ug/m^3 calculated from the 5 months data? Generally SO_2 levels would be expected to be higher in the winter.

Response EPA-100:

Data covering a 12-month monitoring period is now available from the ERT Air Quality Monitoring Program and have been included in this Final EIS. The summary shows an annual average SO_2 concentration of 33 ug/m^3 which is higher than the five-month average but well below the Federal standard of 80 ug/m^3.

Comment EPA-101:

4-528. In paragraph 4.440 it is stated that the "monitoring of NO_x levels at the two sites indicates an average concentration of 20 ug/m^3. As explained previously in this section this represents a worst case situation." No evidence of an earlier reference of this value or what determines the worst case situation has been found.

Response EPA-101:

Monitoring of NO_2 at the Lynch Flood and Route 20 Sites over the 12-month period April 1977 - April 1978 indicated that the annual average concentration was 29 ug/m^3 or slightly higher than that reported for five months of data. The increase agrees with the statement in Chapter Two of the Draft EIS that ambient concentrations are expected to be slightly higher during colder months due to stationary fuel combustion such as home heating. This seasonal variation is expected to be small due to the compensating decrease in nitrogen oxide emissions from mobile fuel combustion sources. The original text of the EIS incorrectly stated that the five-month monitoring period represents a worst case situation and has been changed accordingly.

Comment EPA-102:

Refer to CRG-43

Comment EPA-103:

Refer to CRG-43

Comment EPA-104:

The H_2S emission control during blast-furnace slag granulation is a closed loop system. Since the water used to granulate slag and water used to condense H_2S laden steam will be reused, the possi-bility exists for buildup of H_2S contaminant in the water, causing heavier H_2S emission than outlined in the statement. This needs clarification since H_2S is hazardous and when added to the other H_2S & SO_2 emissions from coke batteries and other sources in the proposed plant, it may have a detrimental effect on sensitive crops such as grapes and other vegetation.

Response EPA-104:

Since blast-furnace slag has a high alkalinity, the water used in the granulation process will become increasingly alkaline, particularly if the water is recycled. Hydrogen sulfide gas dissolved in water will be in equilibrium with the sulfide ion as a function of pH. As the pH increases, the reaction shifts to the ionic sulfide form and the percentage of sulfide present as gaseous H_2S approaches zero.

Based on this fact, it can be concluded that as the slag process water is recycled, the tendency will be for the dissolved H_2S to react to form the nonvolatile sulfide ion, and thus the potential for H_2S emission to the atmosphere will decrease rather than increase. Furthermore, as the recycled water becomes more alkaline, the efficiency of scrubbing the H_2S from the steam generated in the slag granulating vessel will increase, further reducing the emission of H_2S to the atmosphere.

Comment EPA-105:

2-741 - Section 2.584 refers to a three month monitoring period for CO and a two month period for nonmethane hydrocarbons. The months the monitoring was carried out should be listed in the impact statement. A three month period is too short to determine baseline ambient air quality. Standards are defined on the basis of a full year of data and seasonal variations cannot be evaluated during a few months.

Response EPA-105:

The results of the ERT Air Quality Monitoring Program covering a 12-month period have been incorporated into this Final EIS. These data show that the maximum hourly average CO concentration is less then or equal to 20 percent of the Federal standard. Over 99 (99.2) percent of the nonmethane hydrocarbon three-hour average concentration readings at 6-9 a.m. were less than the Federal standard. These results are based on data collected for 239 days within the 12-month period.

Comment EPA-106:

Paragraph 4.441 does not give the amounts of CO background for the area. The predicted values are presented but this is not enough to evaluate the impact.

Response EPA-106:

Data covering a 12-month monitoring period is now available from the ERT Air Quality Monitoring Program. A summary of this data is included in this Final EIS. The data show that the maximum hourly average concentration of CO at both monitoring sites was less than 7.5 mg/c^3 or considerably less than the standa ' of 40 mg/m^3. The text of the statement has also been modified to include int..ation background levels.

Comment EPA-107:

In paragraph 4.434 it is stated that NMHC concentrations average about 0.05 ppm. However, table 2.320 shows an arithmetic average of 0.02755 ppm and a geometric average of 0.10502 ppm. These two values may be in error and should be verified.

Response EPA-107:

The arithmetic average of 0.028 ppm is correct. The geometric average was computed after deletion of all observations below the minimum detectable limit, because a single zero value would cause the geometric average to be zero. The geometric average would thus be biased toward the high end and would be meaningless. These same values were kept in the arithmetic average calculation and were left at zero. Since the NMHC parameter does not require a geometric average, it has been deleted from the text of this statement.

Comment EPA-108:

In the same paragraph it is indicated that the NMHC data was obtained from one ambient NMHC monitor. This provides a very sparse data source to draw conclusions. Values of NMHC from the monitor could be in error because the equipment is subject to relative error (high level of error - particularly at the levels of NMHC cited). Where assumptions are implied, they should be stated and justified. Assumptions embracing the following subjects need detailed explanation: disregard of building downwash, application of lake breeze, selection of modeling receptors, selection of monitoring sites, choice of meteorological data, choice of critical periods and data, choice/calculation of background concentration and points of maximum impact.

Response EPA-108:

The results of the ERT Air Quality Monitoring Program covering a 12-month period have been incorporated into this Final EIS. Data from the Lynch Road site were collected for 239 days within this period while the Route 20 site data were collected for 39 days. The assumptions used in the modeling analysis were thoroughly reviewed and subsequently agreed upon by represenatives of the USEPA (Regions III and V). In all cases, choices were made to include realistic worst case situations.

Comment EPA-109:

2-724 - In paragraph 2.568, line 10 should read. The higher the plume rises, the lower the ground level concentrations.

Response EPA-109:

The statement has been modified in response to the comment.

Comment EPA-110:

2-728 - 1. Page 2-728 - Equation (1) seems to be written incorrectly.

Response EPA-110:

The text of the statement has been corrected in response to the comment.

Comment EPA-111:

2-734 - Reference to the AQSTM model should be explained.

Response EPA-111:

The Air Quality Short-term Model (AQSTM) has been developed by the Illinois Environmental Protection Agency as a mechanism for evaluating the impact of short-term air pollution episodes. This dispersion model is designed to determine concentration of nonreactive air contaminants under a variety of meteorological conditions for periods of time ranging from one to 24-hours.

Through the application of appropriate atmoshperic diffusion equations, the program determines ground-level concentrations of pollutants for specified time periods. The spatial distribution of two contaminants may be obtained in tabular form from the simulation. These tables allow the construction of isopleths which provide a complete regional picture of air quality in the vicinity of the source.

The model allows the selection of up to 900 receptor locations for which ground level concentrations can be calculated and is specifically designed to simulate several meteorological dispersion conditons dependent upon input parameters of the programs. Specific conditions modeled by AQSTM include early morning fumigation, lake shore fumigation, and trapping conditions. For modeling purposes, the AQSTM was utilized solely for its ability to model the lake shore fumigation condition.

Comment EPA-112:

Refer to CRG-31

Comment EPA-113:

4-531. The hypothetical worst case condition for sulfate conversion should indicate a wind speed of 2.5 meters per second to be properly evaluated.

Response EPA 113:

The statement has been corrected in response to the comment.

Comment EPA-114:

On pages 2-788 to 2-802 a brief description is given of the many water quality standards or objectives which have been adopted or proposed for Lake Erie. However, it is never determined which of these conflicting standards should be used as a basis for water pollution control requirements. We believe the following should be addressed in the final study.

a. The Lake Erie boundary line where the Pennsylvania and Ohio standards apply must be identified relative to the outfall location.

b. Only those proposed standards which, as a result of a status check with EPA and the State Agencies, appear likely to be adopted should be used.

c. Varying criteria should be mentioned, but in determining compliance only the most stringent criteria (EPA, IJC (International Joint Commission) or State) for each parameter must be used in assessing the impacts of Lake Erie discharges.

d. Other general water quality objectives of the States or the IJC should be used as a basis for the environmental assessment. For example, a general water quality objective of the IJC cited on page 2-801 states that the water of the Great Lakes should be "Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae." In order to ensure that the objective is met, the EIS should assess the nutrient inputs relative to the project.

Response EPA-114:

All of these standards, objectives, and criteria were discussed in the baseline section of the Draft EIS to acquaint the reviewer with the various standards and criteria that apply to various surface waters. The legal basis for the IJC objectives and the EPA criteria were also discussed in this baseline section.

Throughout the environmental impact analysis, it has been assumed that the outfall would be in the Ohio portion of Lake Erie. The precise outfall location would be determined during the review of the National Pollutant Discharge Elimination System (NPDES) permit application for the proposed Lakefront plant.

The Draft EIS was prepared at a time when it appeared that the proposed Ohio water quality standards would be adopted by the State and approved by the USEPA. Thus, it was the concensus of the agency representatives serving on the technical team that standards should be used to assess the impact of plant effluents on water quality. Subsequently, the proposed standards were disapproved in part by the USEPA on 9 August 1978, under the authority given in Sections 303(c)(3) and (4) of the Federal Water Pollution Control Act, as amended. However, the parts disapproved are judged to have no effect on the substance of the conclusions drawn in this EIS.

The comment indicates that, in determining compliance, only the most stringent "criteria" (USEPA, IJC, or State) for each parameter be used in assessing the impacts of Lake Erie discharges. It should be noted, however, that: (1) in most cases the suggested or mandated limits for these parameters are identical or very close; (2) the EPA criteria are to be considered as guidelines by States, and the IJC objectives are, in part, a goal which hopefully could be attained sometimes in the future, and

(3) that a critical part of the impact assessment, the assessment of the effect on aquatic life, was undertaken on a more basic level, including a consideration of data describing the specific toxic effects of various pollutants on various aquatic species independent of water quality standards. In addition, there appears to be only one parameter, cadmium, for which a significant difference exists between the Ohio standard (0.0012 mg/l) and another criteria or objective (IJC objective is 0.0002 mg/l). For this parameter, the proposed discharge is projected to have no significant effect on the ambient concentrations currently found in the lake.

In general, standards and criteria for various parameters were only discussed if an impact relating to that parameter was being considered. The possible effect of additional nutrient loadings on Lake Erie resulting from secondary impacts (e.g., associated or induced population growth in nearby communities) was also discussed in some detail. The IJC objective that the Great Lakes should be "free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae" could have been mentioned in this discussion, but would need to be interpreted in the context that phosphorus does not appear to be the limiting factor for nuisance weed/algal blooms in this part of the lake. In fact, there appear to be strong arguments in favor of the theory that light penetration, rather than nutrient availability, presently limits aquatic plant production in the nutrient-saturated nearshore areas.

Comment EPA-115:

The modeling work relative to the Lake Erie discharge is a very important aspect of the water quality analysis. Unfortunately, some inadequacies of the model have been identified in the draft EIS:

a. The LAKEPLUME model, which is used to describe subsurface diffusions, has only been verified against surface dye releases (p. C-14).

b. The LAKEPLUME model overestimated by three times the lateral dispersion of the surface released dye (p. C-14).

c. The vertical dispersion component cannot be well defined using existing data (p. C-14).

Comment EPA-116:

Furthermore, the existing model has predicted violations in Lake Erie of the proposed Ohio standards for phenols under typical conditions. The violations include even more parameters under the "worst case" conditions.

In summation, we can conclude that:

a. Some violations of water quality standards in Lake Erie as a result of the plant discharge are a real possibility.

b. The duration and severity of these violations is, as yet, uncertain when one considers the model inadequacies, as cited above.

Comment EPA-117:

It is EPA's opinion that the Environmental Impact Statement should not only address the outputs of the model but should also reflect the confidence the reviewer can place on the outputs. Because of this, additional information is required in the EIS.

a. A detailed documentation of all input variables to the model as well as a listing and description of the data used to quantify these variables is necessary. Any calibration or verification results and interpretation of those results is also needed.

b. A thorough sensitivity analysis must be conducted on the major input variables. The output of such analysis should also be presented and an interpretation of the results. A discussion of the criteria used in determining the range for each of the input variables in the analysis is also required.

Comment EPA-118:

In light of the above facts, it may be more appropriate to report the Lake Erie conditions resulting from the project impact in terms of a range rather than a single figure.

Comment EPA-119:

The equation reported for the Froude number (p. C-12) is the square root of the equation used in the Plume model. Is this a typographical error?

Comment EPA-120:

P.C-18. It is stated in this section that the plume spreads at the surface preserving the same temperature and area. EPA agrees with the statement concerning the temperature but believes that the area is increased due to compression of the depth of flow. This may influence behavior in the Lake Plume calculations.

Comment EPA-121:

P.C-18. The statement relates that it is assumed for input that the Plume convectively mixes through a column of water with a width that is the diameter of a circle with area A . It also relates that this is consistent with the assumption of Plume and provides a slight additional dilution. EPA is certain about this consistency. Why is this method used to compute A ? What is a "slight additional dilution"?

Important aspects of the model LAKEPLUME have been verified in a comparison with dye diffusion studies by G. T. Csanady. This verification study indicated that the change in centerline concentrations versus downstream distance is adequately simulated by the model. However, the lateral spread of the dye was overestimated by approximately a factor of three. Since the lateral spread of the plume was not a factor in any substantive conclusions regarding the environmental impact, this aspect of the model was not significant. (plume centerline concentrations were used for evaluation of water quality and biological impacts.) It was impossible to verify the predicted vertical spread of the dye versus Csanady's experiments. Nonetheless, the vertical diffusion coefficients used in the model are based on extensive experimentation in the Great Lakes by G. Kullenberg and are considered by the applicant's consultant to be the best available method for estimation of vertical diffusivity in the Great Lakes (Murthy, C. R. and A. Okubo, "Interpretation of Diffusion Characteristics of Oceans and Lakes Appropriate for Numerical Modeling" Symposium on Modeling of Transport Mechanisms in Oceans and Lakes. Manuscript Report Series, No. 43, Dept. of the Environment, Canada, 1977).

The major input variables for a thorough sensitivity analysis include the slope of the lake bottom, wind speed, current speed, lake stratification, discharge flow rate and direction, port diameter, number of ports, spacing of ports, effluent temperature and contaminant concentrations, ambient temperature and contaminant concentrations. The lake bottom, discharge flow rate and direction, and port parameters are defined unequivocally. All of the other parameters listed above have been varied over a wide range appropriate to the discharge/site combination, first through the choice of environmental situations modeled. This included eight different situations varying wind speed, current speed, lake stratification, and ambient temperature. Second, variation was achieved through the modeling of "typical" and "worst case" situations for effluent temperatures, effluent contaminant concentrations, and ambient contaminant concentrations. The only way that this approach differs from a classical sensitivity analysis is in the choice of typical and worst case rather than best and worst case or range. The modeling results were then analyzed such that the two with least dilution were presented as the worst case. The range of typical to worst case is roughly the range from the 50th to 90th percentile of the classes of environmental conditions considered. This does no indicate that predicted concentrations will occur a given percent of the time, only that this percentile distribution of the classes of situations considered in the analysis was reported in the DEIS. The "worst cases" chosen as input were conservative, and were considered to occur with a frequency of approximately once per year, so it is probable that the worst case projected would have been exceeded less than 10 percent of the time. The proposed incorporation of final equalization lagoons has further reduced the likelihood of the hypothetical worst case that was modeled. It is believed that the chosen presentation of typical and worst cases is more easily interpreted by the reader than the concept of sensitivity analysis. Nonetheless, the technical content of the analysis is analogous to a sensitivity analysis.

The Arthur D. Little, Inc., report on environmental impacts detailed qualifiers which tend to limit the confidence in dilution predictions to roughly a factor of two. As discussed above, the range between typical and worst case conditions is a fairly conservative estimate of the range of concentrations in the center of the plume and 800 feet from the outfall.

The coupling of PLUME and LAKEPLUME for wintertime conditions procedures were discussed in detail in a letter dated 3 January 1979, from William A. Tucker of Arthur D. Little, Inc. to John Paul of EPA, Large Lakes Research Station. A copy of the letter is appended to this Final EIS. The additional dilution which occurs during convective mixing is about 20 percent, i.e., dilution prior to mixing averaged 18, and after convective mixing about 21. Another concern related to the coupling procedures questioned the constraint that plume area during buoyant spread remained constant. It is true that the surface area of the plume increases as the plume spreads buoyantly. The area referred to in the Draft EIS is the cross sectional area looking in the direction of flow - this cross section remains constant as the plume spreads.

An inconsistency was used in the definition of Froude number between the description of modeling procedures and the PLUME user's guide. The definition found in the PLUME user's guide does not conform to that found in standard fluid dynamics texts, while the definition in Appendix C is correct. This discrepancy is properly corrected for in the PLUME model and has not led to any error in the modeling study.

Several parameters were projected to violate water quality standards. This was noted in the Draft EIS however, for all parameters except phenols, the cause of the projected concentration which exceed standards was ambient water quality, not the wastewater effluent. In lieu of a legal definition of mixing zone by the State of Ohio, the NPDES permitting authority, a determination of violation of water quality standards was not possible. Consequently, the Draft EIS identified modeled those concentrations exceding the standards at an 800-foot reference point, without consideration of the mitigative effects of the final equalization lagoons subsequently proposed by the applicant.

Inclusion of detailed documentation of all input parameters and variables, the data used to quantify the variables, and details of calibration and verification results would be beyond the scope of an EIS. The information is available for use in the NPDES review process and/or upon request to the Buffalo District Corps of Engineers. The input requirements of the LAKEPLUME model are summarized below:

Input Requirements of LAKEPLUME

XINIT	∿ upstream boundary distance from outfall, meters
XM	∿ distance downstream to which dispersion computations are required, meters
YM	∿ cross stream (shore perpendicular) domain of solution, meters
AL	∿ initial horizontal grid spacing, meters
RKY	∿ initial value of horizontal diffusivity, m^2/sec
RKZ	∿ vertical diffusivity, m^2/sec
U	∿ current speed, m/sec
R	∿ decay rate of nonconservative constituents, sec^{-1}
TAM	∿ ambient water temperature, °C
W	∿ wind speed, m/sec
TAIR	∿ air temperature, °C
QA	∿ atmospheric humidity (user-defined units, see FLUX)
SIGMAX	∿ the maximum value of lateral standard deviation, σ, of constituent to be used in the computation of lateral diffusivity, m
KMAX	∿ the maximum number of grid points in the veritical direction
C(XINIT,J,K)	∿ the constituent concentration distribution at the upstream boundary, mg/l or °C

Also required for the execution of LAKEPLUME are user defined subroutines describing the FLUX of constituent to the atmosphere, in either $gm/m^{-2}\ sec^{-1}$ or $cal\ m^{-2}\ sec^{-1}$; and another subroutine describing the depth to bottom versus offshore distance.

The user specifies the vertical resolution desired by choosing KMAX, $\Delta h = \frac{H}{KMAX-1}$. Then AL is chosen such that $AL = \frac{RKY}{RKZ}^{\frac{1}{2}} \Delta h$. Initial values of RKY and RKZ are determined as specified in the addendum to water quality impacts. For all simulations performed for the DEIS, the surface flux and decay rates were assumed to be zero (conservative assumption), i.e., FLUX = 0, R = 0. With this condition, the solution is insensitive to the specified values of TAIR and QA.

It is suggested (see Addendum to Water Quality Impacts) that SIGMAX = .85(Y_c) where Y_c is the distance from shore to plume centerline, and this value was specified for all simulations reported in the DEIS. This formula is a parametric representation of the limitation on the size of turbulent eddies responsible for the diffusivity. The size of these eddies is limited by the proximity of the shoreline. The coefficient (.85 above) may be overriden by the user. The value selected for these computations represents the conservative assumption that eddies as large as Y_c are possible. Then the coefficient .85, is calculated on the basis of a uniform concentration distribution extending from the outfall to the shoreline. The assumption is conservative because it provides for the largest possible limiting diffusivity. The coefficient must be less than or equal to .85.

Comment EPA-122:

Q-BOP Waste Disposal Area

The runoff from this area will contain among other parameters; Iron, Oil and Grease (O&G), and trace metals. The proposed level of treatment (impoundment) may treat solids to acceptable levels, but will not control the other pollutants present. Additional treatment must be considered. A possible treatment scheme could consist of polyelectrolyte addition with settling and oil skimming.

esponse EPA-122:

Two types of wastes from the steelmaking process require land disposal: the refractories and the hot metal mixer dust. The refractories, which are chemically stable by nature, can be disposed in accordance with the specifications for clean fill. In the case of hot metal mixer dust and other fine-grained wastes, the applicant plans to dispose of this material in a lined impoundment. Decant water from the impoundment would be treated by adding lime and a polyelectrolyte to promote sedimentation. Oil skimming would not be provided since no oil and grease are anticipated in the hot metal mixer dust.

Data reported in Table 4-290 of the Draft EIS incorrectly indicated that oil and grease would be found in the Q-BOP waste disposal area runoff and has been altered accordingly. Actually, the principal constituents in the runoff would consist of FeO and graphite flakes which are discernable as total suspended solids, dissolved solids, and trace metals.

Comment EPA-123:

Refer to CRG-51

Comment EPA-124:

Refer to CRG-29

Comment EPA-125:

The discharge from this area can be expected to have the greatest pollution potential of all the storage and runoff areas. As evidenced by many studies (references will be provided if needed), the levels of organic material and heavy metals from an area such as the one proposed at Conneaut is very excessive. Some of the ranges that can be expected for the most significant parameters are listed below:

Parameter	Range of Values (mg/l)
COD	81-33,360
BOD	256-28,000
TSS	10-7,000
NH_3-N	0-1,106
Fe	0-2,820
Pd	.10-2.0
pH	3.7-8.7

Comment EPA-126:

USSC has stated that they intend to meet the New Source requirements for TSS and pH for this discharge. This will not be enough.

Because this will be a solid waste disposal area, the discharge from this site will be considered to be an industrial point source discharge and as such, will be regulated for certain significant pollutants. Therefore, additional treatment will be required to meet these future requirements. Because of this, treatment alternatives should be identified. Two alternative treatment methods are described below:

Comment EPA-127:

1. A biological treatment system to treat the organic constituents followed by a chemical precipitation step to remove the concentrations of iron and other metals present.

Comment EPA-128:

2. A settling pond with pump to recirculate leachate back to the disposal area. This has been demonstrated to be an effective way to eliminate the discharge and stabilize the waste disposal site.

Comment EPA-129:

It should be emphasized that the treatment (neutralization and precipitation) of the runoff from the coal must be sufficient to minimize the discharge of metals. The proposal also indicates that the waste sludge from the coke plant and sanitary wastes

biological treatment systems will be disposed onto the coal piles. This will further aggravate the runoff and drainage from this area.

Comment EPA-130:

Metals and some of the more refractory organic compounds tend to be absorbed and concentrated in the sludge from biological treatment systems. These substances along with arsenic and other compounds, have appeared in significant concentrations in raw coke plant waste waters. Hence, the sludge from the coke plant biological treatment system is anticipated to be highly contaminated with these substances. The disposal of this sludge should be carefully considered. Should this sludge be disposed onto the coal piles, the runoff and drainage from this area will, in all likelihood, require treatment more sophisticated than simple settling and pH adjustment.

Comment EPA-147:

Table 1-32, on page 1-247 - The only milling operation producing wastes requiring ground sealing considerations is the hot strip mill. It is shown that roll grinder metal fines may require ground sealing, yet the roll lathe metal turnings and knife grinder fines in the hot strip mill, and the roll lathe turning and roll grinder fines in the plate mill will not. Especially confusing is the fact that roll grinder fines in the hot strip mill will need ground sealing, yet the roll grinder fines in the plate mill will not. Are the roll grinder fines generated from these two processes different in composition? According to reference sited in the chart (EPA No. 68-01-2604, Volume III, pages 44 and 45), ground sealing is recommended for mill scales destined for land disposal.

Comment EPA-148.

The oil sludges, containing metal fines and metal turnings, produced from the "hot" strip mill and the plate mill are similar in composition as claimed in Sections 1-325 and 1-326 of the Draft EIS. Table 1-32 should be amended to show the potential of ground sealing disposal areas which are to receive a variety of mill scales, metal fines and associated soil sludges.

Comment EPA-149:

On page 1-249, Table 1-33, the fourth column heading should read "Wet Basis" to be consistent with Table 1-34 and to resolve the inconsistencies of two columns with identical headings containing different data.

Comment EPA-150:

On page 4-680, in Section 4.574, the first sentence should elaborate on the method of storing general plant refuse in piles. Conventional landfilling procedures (i.e., compaction and application of cover material) are suggested to minimize adverse environmental effects associated with open dumping of refuse.

Response EPA-125, EPA-126, EPA-127, EPA-128, EPA-129, EPA-130, EPA-147, EPA-148, EPA-149, EPA-150:

Chapter One of the Final EIS has been changed to indicate that disposal sites for roll lathe metal turnings, hot strip mill grinder fines and plate mill roll grinder fines would require ground sealing.

The mill oil sludges are composed in part of an oil and water emulsion used as a coolant during the lathe cutting and grinding process. This coolant, although filtered and recirculated, would retain some oil. The metal fines and turnings listed in Table 1-32 of the Draft EIS make reference to this oily sludge, and the need for ground sealing of disposal areas for such sludge.

In reponse to the comment, the error in Table 1-33 has been corrected to read "wet basis."

The bulky waste disposal area would be used for general plant refuse and slag from hot metal desulfurization process. Desulfurization slag is markedly different from blast furnace slag arising from a separate process step that occurs after the hot metal has left the blast furnace. Chapter Four of this Final EIS has been revised to note this distinction.

The on-land disposal process described in Chapters One and Four would employ conventional land filling procedures. General plant refuse and desulfurization slag would be deposited in layers and covered by soil and compaction on a daily basis. However, the daily soil cover may not be required by the Pennsylania Department of Environmental Resources as garbage and other readily biodegradable organics are omitted.

The desulfurizaiton slag requires a sealed disposal site. However, if the ground surface at the bulky waste disposal site consists of till, it would be left intact. According to the applicant, this particular type of soil would serve as an effective barrier due to its reportedly low permeability. However, to insure ground water protection, soil permeability tests would be conducted at the disposal site during the design phase. In the event the permeability of the soils at the selected site is greater than 10^{-7} cm/sec (the permeability of bentonite clay), a liner would be installed.

Chapter Four of the Final EIS has also been changed to acknowledge the values for municipal solid waste leachate parameters reported in the above comment. However, the applicant has indicated that the effects of chemical interactions between desulfurization slag and general plant refuse is unknown.

The USEPA has indicated that additional treatment would be required for the bulky waste disposal area since such disposal areas are considered industrial pollutant point

sources. The applicant has agreed to recirculate the leachate back to the disposal area to meet EPA requirements. This type of system, which would be designed during the detailed engineering phase, has been shown to be an effective way to eliminate the discharge of pollutants. Appropriate text changes have been incorporated into this Final EIS to reflect this point.

High process control standards are required for metallurgical coking coal. The applicant now believes that its former proposal to deposit coke plant and sanitary waste sludge on the coal piles would alter coking properties of metallurgical coal. Consequently, the applicant proposes to set aside a separate lined impoundment for these dewatered sludges. The impoundment design would meet all applicable permit requirements. In addition, the applicant expects that, without sludge interference, the proposed gravity settling system in conjunction with lime and polymer additions would provide adequate treatment for coal pile runoff. In this regard, the appropriate text and tables of this Final EIS have been revised to incorporate these changes.

Additional tables and text changes in Chapters One and Four of this Final EIS have been made to indicate that: none of the wastewater treatment sludge would be recycled; additional sludge would be deposited onsite; and, incorporation of additional coke plant biosludge constituents.

Comment EPA-131:

As a general comment on the disposal of refuse, sludge and "fine grain" wastes, it should be noted that these wastes may be chemically fixed prior to disposal. This would certainly minimize the pollution potential of runoff from the disposal.

Response EPA-131:

Chemical fixation can retard the migration of certain chemical species from a waste to its surrounding environment. Normally, the process involves admixing materials with the wastes to solidify the mass and reduce the surface area-to-volume ratio, thus decreasing the leaching potential. Chemical treatment may be required for certain wastes classified as hazardous under the criteria set forth in the Resource Conservation and Recovery Act. The applicant has agreed to study chemical fixation of the refuse, sludge, and "fine grained wastes." However, because these wastes vary widely from plant to plant, choice of the appropriate fixation method must be based on extensive chemical analyses and leaching tests of representative waste samples. Consequently, the applicant will investigate chemical fixation in detail shortly after Step I plant operations begin.

Comment EPA-132:

P. 4-838, last line - Detection limit for chlorine should be 0.02 - 0.03 mg/l.

Response EPA-132:

The text has been revised to indicate that background levels in Lake Erie are below 0.1 mg/l and are asumed by the aplicant to be negligble. The 0.1 mg/l concentration is correct for the data reported by the applicant's consultant although the statement indicating this is the present limit of detectability may be incorrect and subject to debate. While the applicant has expressed disagreement over the detection limit indicated in this comment, Corps staff does not believe this document is the appropriate forum for debate on sensitivity of insrumentaion presently available. However, the exact modern detection limit does not apply to measurements that have been made in the past to determine background levels in Lake Erie since the equipment used then was less sensitive.

The following excerpt is taken from the Draft EIS: "Residual chlorine in the effluent is expected to be quite low. The 0.001 to 0.002 mg/l values estimated as typical for the effluent are within the range considered safe for salmonids, the most sensitive species for which effects are reported." This estimate (well below any detection limit) illustrates that the chlorine in the effluent is expected to be below the value considered harmful to any species.

Comment EPA-133:

Refer to EDH-30

Comment EPA-134:

Refer to EDH-30

Comment EPA-135:

Coal Preheating

In paragraph I-298, no mention is made of the disposition of the discharge from the wet ESP's. This discharge will definitely require treatment.

Comment EPA-143:

Water evolved from coal drying (6% to 1%) may contain priority pollutants and should be captured and treated with coke plant wastes. Air emissions from this operation should also be evaluated as hydrocarbons are likely to be discharged.

Response EPA-135, EPA-143:

Preheating would dry the coal from a nominal moisture content of six percent to about one percent. In the heating process, the crushed and blended coal would be entrained in the exhaust gas stream from combustion of coke oven gas. In this preheater design, the entrained coal is flash-heated upon contact with the high-velocity hot combustion gas products. During the process, the absorbed moisture on the coal particles is heated and evaporates at temperatures not to exceed 200°C. Experimental data (A. G. Kim, "Low Temperature Evolution of Hydrocarbon Gases from Coal," U. S. Bu Mines, RI 7965, 1974), have shown that up to this temperature range, the rate of evolution of nonmethane hydrocarbons is small compared to the combustion exhaust rate of 50 mg/Nm^3 projected from COG combustion of the preheater fuel. The data shows that hydrocarbons which are formed from low-volatile coals consist of about one-half methane, and from high-volatile coals, about one-third methane. Ten to 25 percent consists of C_2 hydrocarbon isomers and the balance consists of C_3, C_4, and C_5 hydrocarbon isomers from either type of coal. The emission rates for extended heating have been found to amount to about 70 cc/tonne (0.002 cubic foot/ton) for low-volatile coal and about 200 cc/tonne (0.006 cubic foot/ton) for high-volatile coals. For the planned coal blend proportions to the preheaters of 30 percent low-vol and 70 percent high-vol, the resulting volatilization of hydrocarbons would amount to about 160 cc/tonne (0.005 cubic foot/ton), of which less than half consists of condensible hydrocarbons. At the molecular weight of 72 for pentane, the heaviest hydrocarbon reported from low temperature volatilization, the mass rate of condensible hydrocarbons from the coal blend would amount to about 36 grams/hour from a preheater or about two percent of the hydrocarbon concentration of 1,600 grams/hour in the preheater coke oven gas combustion products, based on the good practice combustion exhaust rate of 50 mg/Nm^3. The exhaust gas steam, with the entrained hydrocarbons from the coal, from each preheater is passed through a wet ESP which decreases the condensible hydrocarbons by 95 percent, nominally, so that the residual emission of nonmethane hydrocarbons from volatilization by preheating the coal with the planned preheater design is at negligible rates. The streams from the wet ESPs are sent to the coke plant water treatment system, which has been separately discussed.

In addition to reduction of water use by recirculation and process engineering, the applicant is also concerned about the water system treatment so that proper water quality can be achieved. Even minor sources of wastewater, such as the discharge from the wet electrostatic precipitators on the coke oven preheater exhaust, would be treated. The discharge from the preheater wet ESPs is to be sent to the coke plant waste water treatment system and processed in the biological system contemplated for coke plant wastes. This water would therefore add to the volume of water to be treated and must be considered by EPA in determining the flow of water expected in the coke plant treatment system.

Comment EPA-136:

Refer to A-12

Comment EPA-137:

Refer to CRG-21

Comment EPA-138:

2. Terminal Treatment Lagoon

The installation of a terminal treatment lagoon is laudable and should be instituted if the plant is built. The lagoon will act as a polishing lagoon, possibly removing additional pollutants and lowering the temperature of the effluent prior to discharge. The lagoon will also equalize the characteristic of the effluent, thereby reducing shock amounts of pollutants entering Lake Erie and will guard against spills entering the Lake.

Response EPA-138:

The applicant is committed to include such a lagoon or series of lagoons sufficient in size to retain the volume of effluent that could be discharged from the plant in a 24-hour period. The text has not been consistently modified to reflect the incorporation of lagoons under "worst case" calculations. Rather, the calculations are presented with the assumption that the most severe impact would occur during direct discharge (i.e., no lagoons). It is important to note that the hypothetical "worst case" effluent and discharge plume concentrations projected in the Draft EIS are no longer applicable since the proposed equalization lagoons would reduce the effluent concentrations below the 24-hour maximum assumed in the "worst case" calculations.

Comment EPA-139:

An analysis of Table I-26 shows that in most cases, the quality of the water discharge is comparable to the quality of the lake water. What this illustrates, is the potential of recycling a large percentage, if not all, of the discharge water back to the main processes. The feasibility of this approach should be addressed by USSC.

Comment EPA-140:

An apparent alternative that has not been discussed is the cascading use of each of the discharges. Such a practice is employed at the Kaiser Steel Corporation, Fontana Works, where the discharge from one operation is reused at another operation with lower water quality requirements. The cascading use, minimizes the total plant discharge.

Response EPA-139, EPA-140:

The applicant has conferred with personnel at the Kaiser Steel Corporation regarding the use of a cascading system at the proposed Conneaut Lakefront steel plant.

There are two important issues that must be considered when evaluating this particular technology. First, water must be cascaded from a process of high product quality, such as the plate mill and strip mill, back toward processes that rely heavily on raw materials, such as the blast furnace and coke plant. Cascading flow must proceed in this direction, since the water used in the strip and plate mills has a lower dissolved solids concentration than the water from the coke plant and blast furnace. Therefore, to employ a recycling system of this type, water must flow from the plate mill and strip mill through the steelmaking process on toward the coke plant and blast furnace. This routing of process water coupled with the fact that near maximum recycling is already proposed for individual plant systems would only yield a small reduction in the total amount of water generated per product ton.

Secondly, the quantity of water discharged at the coke plant and blast furnace would be substantially the same even if cascading and recycling were employed. Thus, there would be no reduction in the total amount of ammonia, phenol, or cyanides.

Further study would be needed to determine where cascading operations could be incorporated to minimize water use. Again, the addition of this system combined with planned recycling at individual process units would have a relatively minor effect. Proper cascading could be used to eliminate the release of domestic sewage effluents, but the net reduction in the volume of the plant discharge would be small.

Comment EPA-141:

Coke Plant

The Draft EIS fails to note the full scale activated carbon treatment system for coke plant wastes installed at the Republic Steel-Cleveland Works in mid-1976 and operated since mid-1977. Reference is made to our letter of April 14, 1978, to Mr. Curtis of U.S. Steel, which provides information about the Republic Steel treatment system. A physical-chemical (activated carbon) coke plant treatment system should be considered in the Draft EIS. The advantages of this type of treatment should include demonstrated removal of priority pollutants associated with coke plant wastes (polynuclear aromatic hydrocarbons).

In addition to the above, a physical-chemical treatment system could be designed to achieve coke plant effluent limitations set forth by EPA which U.S. Steel claims cannot be achieved (ammonia-N). The Republic Steel system has been shown to consistently remove phenolics to less than 0.1 lbs/day, a level if achieved at the proposed Lakefront Plant would assure attainment of Ohio WQS. Violations of phenolics standards are currently projected (p. 4-631-632). With a properly designed ammonia still, and proper biological treatment, the 10 mg/l ammonia-N concentration could be achieved.

Response EPA-141:

The applicant has extensively studied the information concerning this system as well as others. The Republic Steel treatment system currently in use has no provision for cyanide removal other than to dispose of the cyanide-containing wastewater by using it in the quenching of coke. However, the USEPA has stated that coke quenching with anything but the cleanest water would be prohibited. Thus, the applicant will continue to view the quenching of coke as a method of disposing contaminated streams as unacceptable unless advised otherwise.

The Republic Steel system would need to be augmented with an alkaline chlorination step, which would increase the total dissolved solids content of the effluent significantly. Further, the applicant believes that the alkaline chlorination would also increase by at least several orders of magnitude, the possible occurrence of chlorinated phenols (and many other chlorinated hydrocarbons) in the discharge. Thus, the disadvantages appear to outweigh any benefits to be accrued through the use of the Republic Steel system.

The comment also indicated that the Republic Steel system removes phenolics to less than 0.1 pound per day, a level which, if achieved at the Lakefront plant would assure attainment to Ohio water quality standards. Violations for the proposed plant were projected in the worst case situation only because the background levels in the lake are already in violation. Even a reduction of phenolics to 0.1-pound per day would not resolve this particular problem.

The implication that the use of the Republic Steel system would result in a phenolics content of 0.1-pound per day is in error. The total discharge from the Lakefront plant is projected to be 19.9 pounds per day, which includes the 8.2 pounds discharged from the coke plant. However, the 0.1-pound per day value does not pertain to a discharge limit. Actually, the discharge limit at Republic Steel is 2.5 pounds per day.

Comparing systems based on the permit limits envisioned by EPA is more appropriate than comparing the limit for one system with the short-term performance of another. Two-thirds of the process water generated at Republic Steel is disposed of in quenching coke. This water also has a phenolic content. If the entire water generated at Republic Steel were discharged into a waterway, the permit limitation could consider the phenolic content of all streams. Therefore, the Republic Steel permit would have to be modified to allow a level of 7.5 pounds per day. This value equates to a level of 0.0013-pound of phenol per ton of product coke. Applying this number to the 10,000 tons per day contemplated at the proposed Lakefront plant would require a permit allowing a discharge limit of 13 pounds of phenol per day (not including any blast furnace water). The above indicates that the Republic Steel system is probably no better than the proposed system for removing phenolics.

Comment EPA-142:

Refer to A-10

Comment EPA-143:

Refer to EPA-135

Comment EPA-144:

Caustic may be used as an alternative to the use of lime in the fixed leg of the ammonia stills (which appears to be the method selected by USSC. The use of caustic has been demonstrated to improve operational efficiency and reduce the ammonia to lower levels. If ammonia continues to be a problem and the water quality requirements are violated, the ammonia will have to be further reduced. An alternative is breakpoint chlorination of the effluent from the biological treatment plant. This would also entail the use of a carbon system to remove the halogenated organic by-products following chlorination. This system would be similar to the treatment system for the blast furnace blowdown.

Response EPA-144:

Sources of wastewater, such as the discharge from the wet electrostatic precipitators on the coke oven preheater exhaust, would be treated. The discharge from the preheater wet ESP's is to be sent to the coke plant wastewater treatment system and processed in the biological system contemplated for coke plant wastes. This water would therefore add to the volume of water to be treated and should be considered by EPA in determining the flow of water expected in the coke plant treatment system.

In regard to the use of caustic as an alternative to lime in the fixed leg of the ammonia stills, the applicant has expressed reservations about this system. The applicant's ammonia still (the CY-AM) is proposed since it has the capacity to satisfactorily remove not only ammonia but also cyanide and sulfides. The removal of cyanide (and sulfides) in the ammonia stills is an advantage for protection of the biological system which follows. The removal of ammonia in any system is a complicated matter.

For example, the system in use at the applicant's Fairfield Works was designed to remove the ammonia to a concentration of about 100 ppm. An identical ammonia still system would probably be proposed for use at the Lakefront plant. It is possible with significant increases in the steam consumption to design a system which would reduce the ammonia content to lower levels. If this were accomplished, however, the ability of the biological system to remove ammonia would be placed in jeopardy. Sufficient ammonia must be present and fed to the biological system to allow an adequate number of biologically active bacteria to develop and consume the residual ammonia in the feed as well as the ammonia which results from the biological degradation of thiocyanates. If the system at the ammonia stills were designed to reduce the ammonia content to a low concentration, 25 ppm, for example, the biological system would be starved of ammonia, resulting in a very erratic performance of the total system. Should the ammonia still product consistently contain 25 ppm of ammonia and 200 ppm thiocyanate and no biological oxidation of ammonia occur, the ammonia content projected for the effluent would be about 65 ppm (after allowing for the assimilation of some ammonia to form the protein substance of the phenol-consuming bacteria). An ammonia still system of the type designed by the applicant which removes ammonia to a concentration of 100 ppm could result in an ammonia content of 10 ppm after biological treatment. That level, however, would not be in compliance with the remanded BAT levels. The level of 0.00082 pounds per ton of coke, which is the remanded guideline figure, contemplates not only a concentration of 10 ppm but also a total flow of 195 gallons per ton of product coke. All the new sources of contaminated water resulting from air pollution controls together with the standard sources of contaminated water and the necessary dilution water required for proper biological performance suggests that total flow of 275 gallons per ton may be expected. The applicant would be in complete agreement with the statement that "with a properly designed ammonia still and proper biological treatment, 10 mg/l ammonia-N concentration could be achieved" provided that a flow of 275 gallons per ton is recognized.

The applicant believes that the alternative breakpoint chlorination of the effluent from the treatment plant would have a minor beneficial effect on the ammonia (and phenol and cyanide) in the effluent, but would have a major adverse effect on the total dissolved solids concentration and a potentially hazardous increase of the concentration of chlorinated organics.

Comment EPA-145:

Considering that public opposition to new landfills is very strong, U.S. Steel might consider using plant refuse and municipal refuse to cofire with coal for the generation of supplementary steam for electricity or other plant operations. About 250 tons of refuse could be disposed of daily if it were cofired with coal to provide approximately 10 percent of the Btu's required.

Response EPA-145:

The applicant indicates that there are two distinct problems associated with the proposal to cofire about 250 tons of refuse with coal used in the Lakefront site power station. First, the combustion characteristics of the resultant low grade fuel mix would be such that there would be an increase in particulate emissions. Secondly, the residue from combustion could amount to 10-25 percent of the original weight of the refuse thereby increasing the solid waste disposal requirement for the plant by 150-300 percent over present requirements.

A large proportion of the solid waste generated by local communities as well as the Lakefront facility itself is not combustible. Thus, the volume of usable material is too small to justify the operation of an on-site incineration system.

The reduction in energy requirements may be significant over the long run and the resultant savings for the applicant and surrounding municipalities may be substantial. However, this plan would only shift the burden of the solid waste disposal problem to the applicant and would not resolve the difficulties associated with public opposition to the siting of new landfills.

Comment EPA-146:

It is very important that more detailed hydrogeologic information be obtained for specified disposal areas to assure proper design before disposal begins. Is protection provided for preventing leaching of solid wastes into drainage of the old streambed?

Comment MAE-5:

11. Solid waste impacts appear to be accurate, but only if the D.E.I.S. assumption that 96% of the mill's solid wastes will be recovered is valid. The D.E.I.S. assumed expansion of the Lakeview Landfill must also be valid in order that secondary growth impacts do not cause a solid waste disposal problem in the area. Both of these assumptions should be examined more critically. A. D. Little, consultants, have stated in personal conversations with M.A.E. representatives that U. S. Steel would like, if feasible, to place their solid wastes off company property. The final E.I.S. should comment on this option and its implications.

Comment PDER-11:

1. Storage of slag must be accomplished in a manner to preclude surface and ground water contamination. Storage of accumulations of reusable or resalable material shall be allowed to the extent of a verifiable rate of recovery, plus a reasonable supply for market or reuse. The rate of recovery shall be verified by valid contractual arrangements or historical rates.

Comment PFC-23:

Page 4-682 (4.574). The undetermined water quality of runoff from solid waste disposal areas could be very detrimental to the receiving waterway and means of preventing or treating this runoff must be planned in advance.

Comment TU-4:

3. Paragraph 1.343 on page 1-263 mentions criteria for establishment of a solid waste disposal site. The applicant feels that his logic leads to the conclusion that Area 7 is the best site for lined impoundments. The applicant is confused. His own data lead to the conclusion that Area 7 is the worst site. It's closer to Lake Erie than the other sites and contains Turkey Creek.

Response EPA-146, MAE-5, PDER-11, PFC-23, TU-4:

According to the specifications contained in the applicant's fish and wildlife management plan for the Lakefront site, six of the eight potential solid waste disposal sites are located in areas that would either be managed to increase wildlife productivity or retained in their natural state. Among these are the solid waste disposal facility designated Area No. 7.

In view of this situation, the applicant has decided to survey the acreage within the primary plant impact area to identify suitable potential sites for solid waste disposal. Approximately 298 hectares (736 acres) of the developed portion of the plant site would consist of open areas either covered with slag or seeded, while an additional 150 hectares (371 acres) in the eastern access area consists of uncleared or ungraded land. Based on inspection of the tentative site plan, the applicant estimates that half of the total surface area of both land tracts could be made available for solid waste disposal. Under this plan, every effort would be made to avoid the commitment of the shrublands, forests, and wetlands situated in the eastern portion of the Lakefront site.

The site surveys and hydrogeologic data collected by Geraghty and Miller, Inc. and D'Appolonia/Haley, and Aldrich are considered to be sufficient for the purposes of evaluating alternative disposal sites. However, more detailed surveys of prospective areas including borings would be undertaken during the disposal facility design phase. In addition, the applicant is cognizant of the fact that the site selection and design requirements must be in accordance with the criteria set forth in the Resource Conservation and Recovery Act.

As an alternative to onsite disposal of solid waste, the applicant could contract with private operators for the removal and proper containment of wastes generated by the proposed Lakefront plant. These individuals would be responsible for the safe transportation of waste materials to designated disposal facilities that would be managed in accordance with applicable Federal, State, and local regulatory requirements. The applicant has already entered into such an agreement at other steel manufacturing facilities and is exploring the possibility of a similar arrangement at the Lakefront site. However, the availability of Contractors capable of providing this type of service is merely speculative at this time.

The comment concerning the need to store slag to preclude surface and groundwater contamination and the procedures for storage of reusable or resaleable material is acknowledged. Planned uses for slag described in the Draft EIS include processing for metals recovery, recycling to the Q-BOP and blast furnace, and resale as either railroad ballast, lightweight aggregate, raw material for concrete manufacturing, or as a skid-resistant aggregate. Anticipated rates of recycling and the sale of excess blast furnace slag to outside buyers were based on past industry experience. Slag from the Q-BOP, a relatively new marketplace commodity, is only produced by the applicants at the present time. (This type of slag has slightly different chemical properties.) Rates for Q-BOP slag recycling and sale to outside buyers were based on experience at the applicants Gary Works. In addition, future markets for iron and steel slag were also investigated. Slag requires a six-month aging period to allow hydration of unreacted magnesia and lime. This process minimizes the chance that the slag particles will expand or disintegrate after field application. Runoff from the slag storage area would be collected and treated by sedimentation. Additional treatment would be provided if necessary to meet the proposed EPA New Source Performance Standards and any as yet unspecified regulatory requirements. The applicant also would obtain letters of intent from prospective slag buyers approximately one year before operation startup to assure that an adequate market is established.

Separate disposal sites would be provided for four types of waste materials namely: bulky wastes, nonhazardous fine-grained wastes, hazardous fine-grained wastes, and clean fill.

The applicant has stated that those impoundments requiring a liner would be sealed with a material that is compatible with the type of wastes disposed. Selection of the appropriate type of liner would be guided by climatic conditions, cost and availability of materials, and site preparation requirements, and the physical-chemical character of the waste. Liners presently available include asphalt, clay, concrete, plastic, rubber, or any combination of the above. The high oil and grease levels expected in certain sludges would preclude the use of asphalt, just as the high alkalinity of the mixed waste streams would limit the effectiveness of clay as a sealing material. Concrete liners are not appropriate in some instances due to the high concentrations of sulfate and sulfite in certain wastes. Rubber liners are considered unsuitable because of the short life span and the potential for weather related deterioration. Plastic liners may represent a suitable alternative although sampling and analysis of the solid wastes would be necessary to determine overall compatibility.

Chemical treatment may be required for certain sludges if they are classified as hazardous under the criteria set forth in the Federal Resource Conservation and Recovery Act (RCRA). This process can retard certain types of pollutant migration from a waste to its surrounding environment. Normally the procedure used involves admixing materials with the wastes, so that the surface area-to-volume ratio is decreased by formation of a solidified mass. The need for chemical treatment and the choice of a treatment method would depend on chemical analyses and leaching tests of representative sludge samples.

Supernatant from the lined impoundment and runoff from on-land disposal sites would be collected and treated. Based on the volumes and types of wastes described earlier, the combined effluent would be expected to have a low oxygen demand, high alkalinity level, low oil and grease content, and high dissolved solids levels. Under these circumstances, appropriate treatment would include sedimentation and additional control as necessary to meet NPDES permit requirements.

Waste disposal areas would be frequently monitored by the applicant and the appropriate regulatory agencies to insure that there are no problems with the structural stability of the impoundment or the integrity of the liner. Monitoring would include the collection of groundwater samples from one upgradient well and several downgradient wells in the vicinity of each disposal site. Testing would then be conducted to determine which leachate indicators (i.e. chloride, sulfate, sodium, or bicarbonate, etc.) should be monitored on a regular basis. Analysis for other constituents would only be performed in the event that leachates are detected downgradient of a particular disposal site.

Comment EPA-147

Refer to EPA-125

Comment EPA-148

Refer to EPA-125

Comment EPA-149

Refer to EPA-125

Comment EPA-150

Refer to EPA-125

Comment EPA-151:

4-553 - The EIS states that about 1% of the plant emissions would be deposited in the lake annually (fly ash, soot, and iron oxides). An explanation is necessary regarding this low deposition in the lake when the prevailing wind direction is south to southwesterly.

Response EPA-151:

Prevailing winds at the site are from the SW quadrant and air flow from land to lake occurs about 60 percent of the time. The one percent value is based on the low settling velocity of the small particles which escape from the plant's particulate control devices. Most of these particulates would travel with the air flow across the lake.

Comment FPA-152

It was noted on Page 1-137 that extensive adherence to BACT/LAER designations was maintained in controlling emissions. In the discussion of air quality impacts on Lake Erie, it was noted on pages 4-535 to 4-540, that estimates were made of dry deposition rates of NO_x, SO_2 and suspended particulates. Components of these particulates should be identified, and then as may be indicated, addressed in terms of the need to prevent the entry of any toxics into Lake Erie (or Lake Ontario). Further, the EIS expressed "uncertainties about atmospheric removal and transport processes over

water." In view of the sensitivity of Lake Erie to this effect, the EIS should pursue this point further, to attempt to remove the uncertainty. The size and permanence of this facility merits a much clearer impact identification on the Great Lakes.

Comment EPA-153:

The content of the 68 T/yr. of particulate deposition on page 4-536 is poorly identified, e.g., heavy metals usually found in coal and iron ore. Mercury, for example, is one candidate. These particulate effects on water quality of Lake Erie should be discussed.

Response EPA-152, EPA-153:

Airborne particulates from the proposed steel plant would consist predominantly of fly ash, coal dust, iron ore dusts, and limestone dust. Fly ash consists predominantly of commonplace and relatively nontoxic substances such as silica, alumina, iron oxide, and lime. Roughly 90 percent of all fly ash is composed of these substances. Most of the remaining 10 percent consists of alkali and alkaline earth oxides including soda, potash, and magnesia. Toxic trace elements for which State standards, and Federal criteria exist, such as Zn, Cr, Cd, Ag, As, Ba, Cu, Pb, Mn, Ni, Hg, and Se, comprise less than .5 percent of all the fly ash. Coal dust from metallurgical coals has been reported to contain measurable quantities of the same metals.

These trace elements comprise less than one percent of the coal dust.

Reliable trace element concentrations of iron ore and limestone dusts are not available. It is hypothesized for the purpose of analysis that the trace element composition of these raw materials is roughly similar to that of coal dust. Coal ash is presumed to have the same trace element composition as coal ash.

Thus, of the 68 tons/year of particulates estimated to be deposited in Lake Erie, less that 0.1 tons/year will be the toxic trace metals. The deposition of these metals would occur relatively uniformly over vast surface areas of the lake, so there is no possibility that acute toxic concentration would result from this deposition. In terms of a long term chronic effect, due, for example to persistence in sediments, these atmospheric loadings must be compared with the whole lake loading of these constituents by streams, including the Detroit River, and other atmospheric sources. Although it is impossible to accurately estimate the whole lake loadings for any of the heavy metals, even a crude estimate indicates that the contribution of the proposed plant is an insignificant fraction (less than .1 percent) of the total annual load.

In view of the relatively insignificant impact of airborne particulate deposition, there may be little need to attempt a more refined estimate of the rate of deposition. An attempt to eliminate the remaining uncertainties about atmospheric removal and transport processes over water would entail advancing the state-of-the-art of air-sea interaction studies via development of improved instrumentation for sampling, stable platforms in the lake, a comprehensive field study involving several instrumented vessels, and possibly new theoretical developments. In short, the removal of these uncertainties is infeasible at the present state-of-the-art. Tables showing the estimates of trace elements in particulate matter, along with additional discussion of the subject may be found in the Corps response to Comments AHC-1, PHCDE-15, SAE-8, and SAE-9.

Comment EPA-154:

The comment in the last paragraph of Section 4.590 on page 4-594 unfortunately dismisses the effect of those pollutants which are carried out over Lake Erie. Justification for this lack of concern should be presented.

Response EPA-154:

The above-referenced section analyzes the impact of atmospheric emissions on the quality of surface water runoff from the Lakefront site. There was no intent to dismiss the significance of those pollutants carried out over Lake Erie. This point was only emphasized to show that the quality of surface runoff is not influenced to any significant degree by plant-related ecissions.

The impacts associated with the deposition of atmospheric pollutants in Lake Erie is discussed in Chapter Four of this statement in the Section entitled "Deposition of Air and Water Pollutants on Land and Water Surfaces.

Comment FEN-1:

There is a great deal of talk in the E.I.S. about monitoring air quality after the mill is built. Stack emissions from the mill can apparently be predicted with some degree of reliability, but the E.I.S. as much as admits that no one can accurately predict what effect the combined primary air pollutants from the plant itself and secondary pollutants from the increased population will have, particularly on agriculture. Monitoring can only tell us what has happened. It won't do Fairview Evergreen Nurseries a bit of good to learn that we had thousands of dollars damage yesterday because of an ozone excess from 3:00 to 5:00 p.m. We feel certain that if the plant is built we will see some increase in air pollution damage to our nursery stock.

Response FEN-1:

The prediction of air quality impacts resulting from secondary development were predicted through use of the Modified Climatological Dispersion Model (MCDM) and the HIWAY model. These emissions were considered in combination with the proposed facility emissions. The final output demonstrated increased particulates and sulfur dioxide concentration due to the plant with only slight increase from the population growth of the area. In a similar manner, the HIWAY model predicts extremely low carbon monoxide levels due to secondary traffic. The analyses of secondary impacts on air quality is contained in Chapter Four of this Final EIS.

The intent of the regulatory program relating to atmospheric emissions is to limit the emissions to the greatest extent possible in order to protect the public health and welfare. As part of this program, the USEPA must assess the impact on soils and vegetation during the Prevention of Significant Deterioration permit review. Protection is therefore afforded through limitation at the source. The purpose of monitoring is to insure that permit conditions and air quality standards are met.

In regard to ozone, offsets in nonmethane hydrocarbon emissions will be required by the EPA for attainment of ozone air quality standards, resulting in a projected regional reduction in such emissions.

Comment FEN-2:

But why is the EIS not overly concerned with us, or for that matter any of the agriculture in the fertile West County lake plain area? We think it is because they assume we will sell out, pack up and move on as soon as one right developer approaches us with the right offer. They think that in ten years there won't be any more agriculture in the West County lake plain. Anyway, maybe they are right. Our own county planners give the impression that they think the same thing. Almost all of that prime farmland is zoned industrial, or commercial, or suburban residential. So, if all the farmers sell their land, take their money and run, the EIS is right. There won't be any problems with agriculture. But Fairview Evergreen Nurseries, Inc. is not planning to get out. We have been growing trees in that area for almost as long as U.S. Steel has been thinking about putting a mill there. U.S. Steel claims that they will be a good neighbor. Fairview Evergreen is a good neighbor. Most of our 2,500 acres of land is open to hunters and fishermen, bikers and hikers, cross-country skiers and snow-mobilers. It is open land, recreational land to many of you. We would like to be able to see it remain that way. We think A.D. Little an U.S. Steel would like you to think it would remain that way if the mill were built. It won't. We see large areas of prime agricultural land being lost to development. We see the remaining agricultural land posted, patrolled or fenced to keep people out. We see the U.S. Steel project as the end of one way of life in Erie County, and the beginning of another. Agricultural to Industrial. We think the EIS should more clearly state this. Why it doesn't, is up to you to decide.

Comment PDER-21

The Draft EIS also provided specific strategies for protecting agricultural lands and flood plains from the adverse environmental impacts of secondary development. This should also be done for other types of environmentally sensitive areas, especially wetlands, open space, lake bluffs, and stream corridors.

Response FEN-2, PDER-21:

Staff believes that proper management can reduce any adverse impacts that may occur to agricultural land or other environmentally selective areas. It is the responsibility of local planning boards to implement proper land use plans. Sections were included in the EIS which describe the regulations pertaining to the construction and operation of the proposed plant (Chapter One), applicable land use plans, policies, and controls (Chapter Two); the relationship of the proposal to land use plans (Chapter Three); and the impact of the proposed action and related secondary development on land use (Chapter Four). Residents are encouraged to bring the above issues and concerns to the attention of governmental officials and agency representatives involved in the development of land use policy or the formulation of local zoning ordinances.

Comment FWS-1:

The Table of Contents should include a list of all tables and figures, complete with captions and page citations.

Response FWS-1:

The Table of Contents has been expanded in response to the comment.

Comment FWS-2:

The site boundary shown on Figure 1-1 (page 1-12) is difficult to identify, but appears different from that shown on Figures 1-41 (page 1-268), 1-45 (page 1-275, and 1-47 (page 1-278). The discrepancy should be explained or eliminated.

Response FWS-2:

As stated in section 1.22 of the Draft EIS, the purpose of Figure 1-1 is to show the geographic relationships of individual plant process units to one another. The boundary shown on this figure indicates the limits of the applicant's property, while the other figures referred to (1-41, 1-45 and 1-47) show the actual boundary of the proposed plant site. The total area owned or controlled by the applicant is 5,442 acres. However, the actual plant site occupies only 2,160 acres with this parcel.

Comment FWS-3:

Page 1-65, paragraph 1.119 states that both iron and slag will be tapped from a single taphole. If so, this is contrary to usual practice; for example, a large blast furnace being built by Inland Steel Company at Indiana Harbor, Indiana, will have two tapholes and one cinder notch (slag taphole).

Response FWS-3:

Iron ore will be reduced to pig iron in the dual blast furnaces, which have been designed to optimize production efficiency. To this end, each furnace has four tapholes which will be tapped in opposed pairs. The emission control system planned for the blast furnace cast house is to be designed, in part, to capture emissions close to each of the four tapholes of the blast furnace. To take advantage of the emission capture system, the slag would also be withdrawn through the taphole. A slag notch arrangement would also be provided about 1.5m (about five feet) above the taphole for use during startups or serious furnace operating problems.

Comment FWS-4:

Page 1-74, paragraph 1.130 - The abbreviation "EOT" is not given in the list of abbreviations (page xxxvi).

Response FWS-4:

The abbreviation "EOT" stands for "electric overhead traveling" as in cranes used to support various mill operations. The term has been added to the glossary which accompanies this Final EIS.

Comment FWS-5:

Refer to ADR-6

Comment FWS-6:

Anticipated tonnages of raw materials necessary to support the steel plant compared to what is currently being received at the P&C Dock may appear to support the need for the amount of docking space proposed. However, large acreages of upland have been set aside for raw material storage. Thus, it would appear that the proposed pier extensions may only be justifiable based on some undocumented expected frequency of ship arrival and unloading rates. Further discussion and documentation is necessary regarding total number of ships that can reasonably be expected to utilize docking facilities at the same time, frequency of unloading, and the absolute minimum amount of unloading pier requirements.

Response FWS-6:

The project description emphasized the high volume of raw materials to be consumed by the plant. These raw materials would be supplied in large part through the Port of Conneaut. An essential element of the proposed action, therefore, is an expansion of the facilities of the port to handle the increased flow of materials above its baseline growth requirement. The projected shipping requirements for iron ore and limestone to the plant amount to an average of 1.15 ships per day. This rate of ship traffic is equivalent to 25 percent of the baseline growth projection of harbor ship traffic without the proposed plant. The planned expansion of dock facilities has been designed to accommodate several lake vessels simultaneously, depending on their size. In addition, the docks are to be equipped with high-volume unloaders with combined operating rates approaching 10,000 tons per hour. Thus, smaller vessels could be unloaded in a matter of a few hours so that their dock time could be minimized. The larger vessels would be self-unloaders that are capable of unloading in a comparable amount of time, so that turn-around time should also be relatively short. Hence, there would be sufficient capacity to service arriving and departing vessels.

Comment FWS-7:

The proposed pier configuration, aside from the massive amount of required dredging, is expected to cause some water quality problems. Specifically, reduced and/or altered circulation patterns and perhaps increased deposition of silt and other pollutants entering the harbor from Conneaut Creek are anticipated. Other alternatives to pier configuration, location, and length should be discussed in the final EIS. For example, an unloading facility outside the harbor on the lakeward side of the eastern breakwall beginning at the 15 or 20 foot contour would have far less impact on existing aquatic resources. The integrity of the productive shallow water areas within the harbor would be maintained. A second alternative that should be addressed would be the feasibility and/or adequacy of extending required pier space in a straight line from the existing eastern pier. Dredging would be confined to existing deeper areas on the west side of the extension. Maximum utilization of flow-through culverts would be essential.

Response FWS-7:

Many comments were received during the review of the Draft EIS concerning the effects of the proposed pier on water quality and aquatic habitat loss. In response to these concerns, the applicant has redesigned the pier so that less habitat is utilized and free circulation of water is permitted. A detailed description of this proposal can be found in Chapter One of this statement.

Construction of an unloading facility on the lakeward side of the U. S. East Breakwater would circumvent the need for development of the shallow water areas in Conneaut Harbor. However, the offshore configuration is impractical for a number of reasons. For example, a large island would have to be constructed to provide a stable platform for the mooring of lake vessels and the installation of the required unloading equipment and conveyor system. In this particular case the commitment of aquatic habitat would be higher although the productivity of this area is likely to be lower than the shallower portions of Conneaut Harbor. Secondly, the facility would provide little protection during storms or periods of intense wave action, thereby increasing the potential for ship-structure collisions and the spillage of raw materials and fuel oil. To provide safe navigation, an access channel must be dredged between the 30-foot bottom contour and the selected site. If the structure were constructed at the 15-foot contour, a navigation channel approximately 2,750 feet in length would be needed, while at the 20-foot contour, the required channel length would be about 1,750 feet. Since bedrock lies close to the bottom surface in this area, blasting would also be required which could have a severe impact on the aquatic biota depending on the time of year the work is performed. In contrast, the area dredged adjacent to the applicant's open pier in Conneaut Harbor consists largely of lake sediment and would only be about 1,100 feet in length. Further, shoals would form either during storm periods or as a result of littoral deposition since the access channel to the offshore island would lack physical protection. Under these circumstances the need for maintenance dredging would increase substantially over the long term resulting in the continued disturbance of habitat within and adjacent to the channel. In view of the above factors the Corps staff does not agree that this alternative would have less impact on aquatic resources than the applicant's revised proposal.

Extension of the proposed pier in a straight line as suggested would interfere with the navigation of deep draft vessels and recreational small craft utilizing the outer and inner harbor areas at Conneaut. The resultant hazard could increase the potential for ship collisions and prevent full utilization of the harbor and the applicant's unloading facility during the regular navigation season.

Comment FWS-8:

Figure 1-39 (page 1-262) shows no site boundary but is captioned "Available On-Site Solid Waste Disposal Areas." However, areas labeled 1, 2, 3, and 4 in the figure are outside the site boundary as shown on Figures 1-41 (page 1-268), 1-45 (page 1-275), and 1-47 (page 1-278). It would be helpful to have the applicant's property line clearly shown on all figures of the site.

Comment FWS-9:

Paragraph 1.343 on page 1-263 mentions four criteria used by the applicant to evaluate potential sites for solid waste disposal. Two of the criteria may be of lesser importance insofar as selection of a lined impoundment site is concerned. Type of waste material may not be a critical criterion if properly lined impoundments are used for fine-grained waste regardless of their location. Groundwater protection would also hopefully be assured by impoundment lining regardless of impoundment location. The remaining criteria do not lead logically to the conclusion that Area 7 is the best site for lined impoundments. On the contrary, they lead logically to the conclusion that Area 7 is the worst site. Area 7 is closer to Lake Erie than six of the other seven potential sites. Furthermore, it contains a major portion of the Turkey Creek ravine which is probably the most sensitive ecosystem on the property. Areas 1 and 2, on the other hand, are the farthest from Lake Erie and contain mostly northern hardwood forest rather than poorly drained, shrub-filled old fields and riparian areas. The latter habitat is essential to woodcock, the migratory terrestrial species of concern to the Fish and Wildlife Service.

Comment FWS-69:

Paragraph 6.110 mentions shrublands, forests and wetlands in the eastern portion of the plant site that may be cleared for solid waste disposal, if such disposal is not allowed in the Turkey Creek ravine. These tracts should be identified and described in greater detail so determination can be made on which scheme involves the more serious environmental impacts.

Comment PGC-8:

First, a uniform method for describing vegetative types should be developed and clearly defined. Next, the vegetation type map should be field checked for accuracy and uniformity, modified as necessary and reproduced in sufficient scale to allow accurate area determination and analysis.

Next, the proposed plant layout (or layouts) including all on-site solid waste disposal proposals should be superimposed on the vegetative map and the areas and types of the impacted portions tabulated. Tabulation should permit identification of the impacted areas in each state.

Response FWS-8, FWS-9, FWS-69, PGC 8:

All of the solid waste disposal areas shown in the above referenced figure are located on land owned by the U. S. Steel Corporation. The limits of the proposed Lakefront Plant site are shown in Figure 1-1 of this Final EIS.

According to the specifications contained in the applicant's Fish and Wildlife Management Plan for the Lakefront site, six of the eight potential solid waste disposal sites are situated in areas that would either be managed to increase wildlife productivity or retained in their natural state. Among these is the solid waste disposal facility designated Area No. 7.

In view of this situation the applicant has decided to survey the acreage within the primary plant impact area to identify suitable potential sites for solid waste disposal. Approximately 298 hectares (736 acres) of the developed portion of the plant site would consist of open areas either covered with slag or seeded, while an additional 150 hectares (372 acres) in the eastern access area consists of uncleared or ungraded land. Based on inspection of the tentative site plan, the applicant estimates that half of the total surface area of both land tracts could be made available for solid waste disposal. Under this plan, every effort would be made to avoid the commitment of the shrublands, forests, and wetlands situated in the eastern portion of the Lakefront site.

Studies conducted by the applicant during the course of preparing the Fish and Wildlife Management plan for the Lakefront site included detailed surveys of vegetative cover types. The resultant maps are included in Chapter Two of this Final Environmental Impact Statement and may be compared to general site plan for the Lakefront Facility.

Comment FWS-10:

Page 1-267, paragraph 1.346 - The chemical, physical, and biological characteristics of Lake Erie bottom sediments to be disturbed during dredging of the intake-structure pipeline trench should be assessed. Such data would be helpful in evaluating adverse effects on water quality of Lake Erie within the project area that may result from resuspension of any toxic substances present.

Comment TU-5:

Construction/Dredging

Page 1-267 paragraph 1.346 fails to assess the chemical, physical, and biological aspects of lake sediments that will be disturbed during dredging for the intake-structure pipeline trench.

Response FWS-10, TU-5:

Chapter Two of the Draft EIS contained a description of the chemical, physical, and biological characteristics of the lake sediment while the impacts of offshore pipeline construction were addressed in Chapter Four.

Sediments in the vicinity of the proposed intake-discharge structure (Stations LE-5 and LE-9) were sampled in May and August 1977. Although results were variable, seven parameters, including zinc, lead, mercury, total Kjeldahl nitrogen (TKN), ammonia, iron, and nickle exceeded recommended EPA (Region V) guidelines. It should be noted, however, that the guidelines developed by the U. S. EPA have not been adequately related to the impacts of sediments resuspension in the open lake and are considered interim guidelines until more scientifically sound values are established. Two tables have been included with this response identifying individual station test results.

Sediment grain size analysis for this area revealed that lake stations were generally dominated by very coarse sand and larger particles. Beaches consist primarily of sand and gravel and may contain some slate or shale shingles. Muddy deltas of finer grain sediment may be found at stream outlets (i.e., Racoon Creek). Sampling in the open lake area adjacent to the proposed site indicated that where bedrock is not exposed it is only covered by a layer of sediment two to six inches thick. Grain size of these sediments were comprised of a mixture of coarse and fine-grained materials derived largely from the shoreline bluffs.

Benthic organisms inhabiting the bottom sediments offshore of the Lakefront site consisted primarily of aquatic insects, molluscs, and crusteceans. Densities ranged from maximum of 4,151 individuals/M^2 at LE5 to a minimum of 78/M^2 at Station LE1. The absence of suitable substrate and protection precludes the presence of macrophytic vegetation and thereby reduces the occurence of epiphytic and periphytic biota. Except for phytoplankton, conditions are too harsh to sustain a significant floral community. Similarly the absence of niche variations reduces the diversity and productivity potential of various faunal populations.

Impacts associated with the alteration of the substrate would permenently displace a small area of existing bottom habitat, as well as temporarily disturb adjoining habitat, thereby inhibiting productivity within the construction zone. However, placement of riprap along the length of the pipeline would ultimately increase available substrate surface area, and provide a unique habitat presently not available. Various factors which are generally attibuted to riprap structures such as cover, protection, and substrate suitability, may enhance the biotic of potential of the site. Thus, efficient benthic recolonization as well as attraction of other aquatic organisms not previously common to the site may be expected to occur if the riprap "reef" is constructed.

Resuspension of dissolved solids (i.e., heavy metals) silt and organic debris may also have transitory adverse effects. Inhibition of primary productivity, bio-availability of heavy metals, siltation over downdrift habitat, and a decrease in ambient dissolved oxygen levels are impacts that may occur but are not expected to be of significant magnitude. The most critical of these is the possibility of increasing toxic heavy metals (i.e., Hg) availability to various organisms capable of metabolizing these constituents. Recent studies have shown however, that the potential for a serious impact, particularly from a relatively small scale one-time event as proposed, would be negligible. When sediments are mixed with oxygenated water heavy metals tend to sorb to non hydrous oxides, clays, and organics, forming particles that precipate from the water column. Also limiting their bioavailability and toxicity is their affinity to complex with sulfides, chlorides, bicarbonates, and other constituents.

Further, Corps staff intends to recommend permit conditions which would minimize blasting impacts which could effect nearby ichthyoplankton populations. Blasting mats, deployment of fish barriers, and restricted nearshore blasting periods would be required if a permit is issued.

Bottom Sediment Chemistry for Lake Erie (LE) and Lower Conneaut Creek (CC), 15 August and 17 August 1977 (Conneaut Creek Sampled 17 August 1977, all values expressed as percent dry weight.)

Parameter	LE1	LE2	LE3	LE4	LE5	LE9	LE10	CC1	CC2
NO_2-N	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0002	0.010
NO_3-N	0.0004	0.0004	0.0005	0.0004	0.0006	0.0005	0.0003	0.0004	0.0010
NH_3-N	0.006	0.008	0.010	0.006	0.007	0.010	0.008	0.010	0.002
PO_4-P	0.017	0.024	0.011	0.020	0.015	0.020	0.010	0.018	0.017
TKN	0.055	0.078	0.078	0.035	0.035	0.14	0.030	0.15	0.002
Cd	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cr	0.0009	0.0014	0.0012	0.0010	0.0007	0.0017	0.0003	0.0018	0.0013
Cu	0.0014	0.0025	0.0026	0.0015	0.0012	0.0026	0.0022	0.0035	0.0038
Fe-Total	3.07	3.40	3.16	2.62	2.17	3.15	3.35	4.19	3.13
Ni	0.0026	0.0025	0.0031	0.0027	0.0021	0.0038	0.0034	0.0037	0.0036
Pb	0.0015	0.0024	0.0027	0.0011	0.0007	0.0028	0.0014	0.0042	0.0039
Zn	0.016	0.010	0.0094	0.004	0.0080	0.013	0.0071	0.014	0.013
TOC	0.27	0.35	0.47	0.29	0.29	0.41	0.35	0.76	0.99
Oils	0.006	0.10	0.010	0.004	0.012	0.006	0.004	0.010	0.06
Hg	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Sediment Chemistry, Lake Erie (LE) and the Two Downstream Stations in Conneaut Creek(CC), Conneaut, Ohio, 17 and 18 May 1977. (Sediments Sampled at CC2 on 18 May 1977, Remaining Stations Sampled on 17 May 1977; All Values Expressed as Percent Dry Weight).

Parameter	CC1	CC2	LE1	LE2	LE3	LE4	LE5	LE9	LE10
NO_2N	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
NO_3N	0.0006	0.0005	0.0002	0.0003	0.0002	0.0004	0.0002	0.0001	0.0004
NH_3N	0.0006	0.0005	0.0008	0.0004	0.001	0.001	0.001	0.0005	0.001
PO_4-P	0.001	0.0004	0.001	0.001	0.001	0.001	0.001	0.001	0.001
TKN	0.008	14.6	16.8	0.005	5.0	19.0	0.012	0.002	20.7
Cd	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cr	0.0028	0.0011	0.0044	0.0025	0.0022	0.0030	0.0011	0.0022	0.0035
Cu	0.0032	0.0014	0.0029	0.0008	0.0016	0.0024	0.0008	0.0004	0.0027
Fe-Total	4.30	3.86	3.81	3.17	2.59	3.23	1.36	1.51	3.69
Ni	0.0041	0.0019	0.0050	0.0019	0.0026	0.0037	0.0031	0.0034	0.0049
Pb	0.0028	0.0016	0.0042	0.0010	0.0017	0.0030	0.0090	0.0080	0.0038
Zn	0.012	0.0065	0.017	0.011	0.0091	0.013	0.0050	0.0069	0.017
TOC	0.55	0.088	0.55	0.14	0.39	0.42	0.14	0.070	0.54
Oil	0.01	0.002	0.008	0.006	0.01	0.006	0.006	0.01	0.01
Hg	<0.0001	0.0002	0.0006	<0.0001	0.0005	0.0003	0.0003	<0.0001	<0.0001

Comment FWS-11:

According to the last sentence of paragraph 1.347 on page 1-273, a rationale for intake location and design is appended to the draft statement. We found no such appendix. However, we noted that Appendix C (dealing with water quality modeling to determine outfall location) cautions against locating intake and discharge at the same depth contour as now proposed by the applicant.

Response FWS-11:

The text was in error and is now corrected to read, "A technical discussion regarding the rationale for discharge structure location..." instead of "intake" as previously stated. Appendix C is the correct citation for this discussion. Biotic factors used for the location of the intake structure may be found in the section titled, "Impact on Aquatic Biota," in Chapter Four.

Concerning the siting of an intake and discharge structure at the same depth contour, the text of Appendix C meant to point out that locating such structures close together could adversely affect plant operating efficiencies rather than the aquatic biota. It is true that the applicant proposes to locate the intake and discharge at the same contour. However, the structures would be situated about 2,000 feet apart and are not expected to have an adverse impact on plant operations. Since the above referenced text is misleading it has been deleted from Appendix C of this Final EIS.

Comment FWS-12:

Refer to DA-1

Comment FWS-13:

Paragraph 1.354 on page 1-281 states that 1,290 acres of the site would be cleared of vegetation and graded as part of Step I and II construction, and that several hundred more acres would be used for solid waste disposal during the operating life of the plant. The latter statement contradicts items 3(A)(3) and 3(B)(3) of the SUMMARY section. These items state that 1,290 acres of the site would be used for buildings, roads, ponds and waste disposal but that the remaining 1,470 to 1,500 acres would not be altered. This serious discrepancy should be explained or eliminated. The final EIS should include a large-scale detailed figure showing existing topographic features of the site (e.g., tributaries and mainstem of Turkey Creek and roads) and clearly delineating areas to be developed and areas to be left unaltered.

Response FWS-13:

The total area required for disposal of solid waste depend on the rate at which wastes are generated (assuming fixed rates of processing and recycling) and the capacity of the available sites. At the present time the most appropriate method of estimating acreage requirements involves consideration of the features associated with each suitable site and the percentage filled each year. The consulting firm of Gerraghty & Miller Inc. identified eight potential locations on the Lakefront site that could be used for solid waste disposal. Within this group preference was given to three sites totaling 353 acres based on the assumption that 107 acres/year would be needed for solid waste disposal. Under these circumstances 1,290 acres would be required for plant facilities, while an additional 353 acres would be needed for solid waste disposal. However, these estimates are no longer valid since the applicant does not intend to place fill in the Turkey Creek ravine.

According to the information contained in the applicant's Fish and Wildlife Management Plan, six of the eight potential disposal sites are situated in areas that would either be managed to increase wildlife productivity or retained in their natural state. In view of this situation the applicant has decided to survey the acreage within the primary plant impact area to identify suitable potential sites for solid waste disposal. The same criteria used by Gerraghty & Miller Inc. would be used during this site selection process namely: Nature and type of waste material, groundwater protection, distance from Lake Erie or other surface waters, and avoidance of sensitive terrestrial ecosystems. To implement the change in disposal area siting the primary impact area must be expanded from 1,643 acres (the sum of plant facility and solid waste needs) to 1,766 acres. The difference of 123 acres is apparently related to the topographic differences between the original Turkey Creek ravine sites and the relatively level land comprising the primary impact area.

A detailed map delineating the areas to be developed from those that would not be altered can be found in Figure 2-140. In addition, the inconsistencies arising from the differences in the data reported in the summary and the text of this statement have been corrected in response to the comment.

Comment FWS-14:

Refer to CRG-41

Comment FWS-15:

The legend for Figure 2-54 (page 2-62) fails to distinguish between important mammal habitat and important game bird habitat. Both areas, according to the legend, are white, but no such white areas are evident on the figure itself.

Response FWS-15:

The figure has been corrected in response to the comment.

Comment FWS-16:

Page 2-936, paragraph 2.704 - This paragraph seems to imply that undisturbed open areas of comparable quality to that which exists on the proposed site exist througnout Ashtabula County. It states that, "These areas are particularly important when used as farm game cooperatives, where farmland is managed for simultaneous use as game and wildlife habitat." In order for the reader to assess the values of such areas to perhaps support or ameliorate losses in production that will occur at the project site, a list of those "open areas" and acreages that are intensively managed for game and other forms of wildlife, and which exhibit a comparable degree of diversity of habitat, should be provided.

Response FWS-16:

The implication that either comparable open areas, when properly managed, would serve to ameliorate losses expected at the project site was not intended. The value of such "open areas" is dependent upon factors such as juxaposition to other vegetative communities. Although wildlife programs have been developed to utilize these areas, the specific wildlife values of these areas are most accurately developed on a site by site basis. Due to the large number of interrelated site specific factors involved in wildlife value assessments, staff does not believe that comparisons between the value of the site and that of managed open areas in Ashtabula County would prove to be meaningful.

Comment FWS-17:

The description of Ashtabula County forest on page 2-936, paragraph 2.702, mentions big shell bark oak. We are unfamiliar with this common name and doubt that such a tree species exists (perhaps it is shellbark hickory).

Response FWS-17:

The text has been corrected in response to the comment.

Comment FWS-18:

In a discussion of wetland areas within Ashtabula County, paragraph 2.706, page 2-938, the reader's attention is called to Figure 2-66, page 2-652. This particular figure does not depict the distribution of bogs, marshes, and swamps in that portion of the principal Study Area. An accurate map should be displayed.

Response FWS-18:

The statement has been corrected in response to the comment.

Comment FWS-19:

The word "sufficient" in the first sentence of paragraph 2.717, page 2-942 should be either omitted or the meaning more fully explained. Again there is an implication that other habitats within the county will sustain the loss of wildlife production that will occur on the project site in addition to their current production levels. This is usually not the case since these other areas are most likely to be at or very near maximum carrying capacity. The lake front site is unusual to Ohio in many aspects. Current population and production levels of woodcock, a migratory bird, have prompted wildlife biologists from both Ohio and Pennsylvania to express the opinion that the lake front site sustains the best woodcock populations of any known site within the boundaries of either the State of Ohio or the Commonwealth of Pennsylvania. It is highly unlikely that other available habitats will be able to sustain the loss of these birds.

Response FWS-19:

The word "sufficient" has been deleted to avoid the potential for of misinterpretation. This chapter is intended to give the reader a brief description of wildlife of Ashtabula County. No attempt was made to imply that other areas would be able to sustain the loss of wildlife. Intensive wildlife management however, could reduce losses for targeted species. An expanded discussion of plant-related impacts on wildlife resources specific to the Lakefront site is presented in Chapter Four of this statement.

Comment FWS-20:

Also, in paragraph 2.717, page 2-942, which deals with wildlife of Ashtabula County, there should be some attempt to provide additional data relative to the information provided in Tables 2-387, and 2-388 (page 2-943 through 2-945) in order to enable reviewers to compare the lake front site with the county and state as a whole.

Response FWS-20:

Data provided by the Pennsylvania Game Commission for the Pennsylvania section of the Lakefront site have been incorporated into Chapter Four of this Final Environmental Statement under the sections entitled Terrestial Impacts and Recreation.

Comment FWS-21:

In a discussion of a "Summary of Unique Biotic Features," page 2-946, the Turkey Creek Watershed should also be listed as one of those sites exhibiting "high quality habitat in terms of available food and cover."

Comment PGC-28:

Figure 2-134 (page 2-955) is a map of environmentally-sensitive areas in Erie and Crawford Counties. The Turkey Creek drainage is not included. Paragraph 2.736 (page 2-954) states this map shows significant wetlands. In view of the importance assigned to Turkey Creek by the Draft EIS and the review agencies, this appears to be a significant omission.

Response FWS-21, PGC-28:

The areas considered for inclusion in Ohio and Pennsylvania Natural Area Projects are identified in Chapter Two of this Final EIS. Neither State included the Turkey Creek Watershed in the list of sites, even though it may offer "high quality habitat in terms of available food and cover." The information presented in this section relied on judgements of two resource agencies, namely the Western Pennsylvania Conservancy and the Ohio Department of Natural Resources, who prepared the source materials on which this portion of the statement was prepared.

Comment FWS-22:

The game bird mentioned in paragraph 2.738 should be ruffed grouse, not ruffled grouse.

Response FWS-22:

The statement has been corrected in response to the comment.

Comment FWS-23:

Paragraph 2.743 on page 2-951 states that certain species lists and lengthy tables have not been included in an effort to conserve space. In opening comments we have indicated the reason why we cannot agree to the omission of certain figures, charts, or lists which have been readily available to members of the technical review team. Inclusion of the following figures and/or tables relative to the discussion of existing biotic communities on the proposed lake front plant site is deemed essential in order to effect an adequate final impact statement: (Figures and tables from Volume II of the Second Interim Report - Terrestrial, December 1977):

(1) Table IV-1, page IV-34, a "Checklist of Plant Species Collected at the Proposed U.S. Steel Lake Front Site, Conneaut, Ohio"

(2) Table IV-4, page IV-72, "Plant Species Reported for Erie County, Pennsylvania, or Ashtabula County, Ohio, which are Found on the Preliminary List of Rare and Endangered Species List for Ohio"

(3) Table IV-5, page IV-78, "Plant Species Reported to be Rare in Western Pennsylvania (after Buker, 1975)"

Response FWS-23:

The same figures, charts, and lists that were supplied to the technical team have been placed in three separate project information files that are fully accessible to the general public. These files were established in Erie, PA, Conneaut, OH, and Cleveland, OH, during the month of August 1977 and are updated on a regular basis by the Corps of Engineers staff. Thus, all of the information used to compile this EIS is readily available to the general public as well as the reviewing agencies. We agree that tables and graphic aids are useful when describing regional or site specific ecology. However, the mere use of tables by themselves will not convey all of the information necessary to describe a particular ecosystem. Further, tables, figures, and charts should not be included in an EIS if they are redundant and only of limited value to the reviewer.

The addition of the tables referenced in the above comment would not measurably improve the description of the floristic resources of the Lakefront site. For example, Table IV-1 contains a list of the common and scientific names of plant species collected at the Lakefront site, but includes no data that would add to the existing discussion on plant ecology. The species listed in this table were also identified in the plant community descriptions which appeared in the draft EIS. Secondly, the addition of Tables IV-4 and IV-5 is considered to be redundant since the data they contained had already been summarized in Figure 4-118 and its accompanying legend.

In conclusion, the added tables would provide only incidental information to the reviewer while at the same time unnecessarily increasing the length of the EIS and the degree of redundancy. Therefore, the above-referenced tables have not been included in this final Environmental Impact Statement.

Comment FWS-24:

The legend for Figure 2-138 (page 2-965) fails to distinguish between wetland tree communities and standing water. Both areas, according to the legend are black.

Response FWS-24:

The original legend for Figure 2-138 distinguished between wetland tree communities and standing water, but unfortunately both appeared black due to limitations in the printing process. This figure has been modified so that the reviewer can readily distinguish between the two communities.

Comment FWS-25:

Alder is a prominent and ecologically important shrub throughout much of the riparian area along Turkey Creek and in the poorly drained old fields. It should be included in Tables 2-395 (page 2-967) and 4-321 (page 4-747).

Comment PGC-5:

Figure 2-136 (page 2-964) shows vegetation types and biotic communities of the proposed project site. This Figure and Figure 2-135 (page 2-962) indicate the locations of nine terrestrial biotic community study areas. Tables 2-394 (page 2-966) and 2-395 (page 2-967) contain supporting data and paragraphs 2.744 and 2.748-2.753 are explanatory text. All this should be adequate to accurately identify and describe the vegetative types and biotic communities. However, due to many contradictions and much confusion, it does not.

Response FWS-25, PGC-5:

Several systems have been used to evaluate and classify plant cover types on the Lakefront site. As a result, some confusion can arise when comparing specific areas grouped together under a separate and distinct set of assumptions. In general, a multi-system classification scheme is a useful method of describing areas with diverse stands of vegetation, but is totally impractical for the purpose of contrast and comparison of individual units, categorized by different systems. For example, species such as the speckled alder (Alnus rugosa) which are ecologically important, could be classified as a "tall slender shrubs," although not specifically stated. In view of the differences associated with the various systems, no benefit would be derived by modifying the tables as suggested.

An updated and comprehensive evaluation of biotic communities can be found in Chapter Two of this statement under the section entitled A Description of Floristic Communities by Lifeform and Species, is included along with a map which illustrates seral ecotypes, interspersion, and juxtaposition.

Comment FWS-26:

Study Area 9, according to paragraph 2.752 on page 2-972, is covered with bushy shrubs, but Figure 2-136 (page 2-964) shows a different vegetation type, i.e., tall slender shrubs. This should be corrected.

Response FWS-26:

Study Area 9 on Figure 2-136 was incorrectly depicted as tall slender shrubs and should have been designated as bushy shrubs. The figure has been corrected in response to the comment.

Comment FWS-27:

Discussion of avifauna activities on the lake front site in paragraph 2.773, page 2-981 is quite brief. Although avian activities in relation to various ecotones were discussed earlier in this section, there is no mention of the importance of this site to migratory bird activities. For example, on page VII-2 and VII-13 of the Second Interim Report, December 1977, three important statements referring to migration are made. Their inclusion in the FEIS will strengthen this section. A discussion of study areas 4 and 5 on page VII-2, states that, "The Lake Erie shoreline is a major flight-path for birds in this locality." Further, on page VII-13, in a discussion of general migratory patterns, the applicant's consultant has stated that, "In view of the Great Lakes as an obstacle to migrating birds, the location of the study site on the south shore of Lake Erie is significant. For years, this area has been well known as a place to make observations of migratory birds." Paragraph 2, page VII-15 of the Second Interim Report also provides some additional insight regarding the attractiveness of the general area to migratory raptors stating that, "Several rare or unusual raptors have been seen in the vicinity by bird banders and falconers. Bald eagles and gyrfalcons have been notes in the Lake City, Pennsylvania area." Lake City is only a few miles to the east of the proposed site. Eagles were observed in 1971, 1973, and 1974. Two gyrfalcons, regarded as accidental species, were observed in the spring of 1977.

Comment TU-6:

Paragraph 2.717, page 2-942. It's not true that other areas will "sufficient" ly sustain the displaced migratory birds.

The importance of the site to migratory birds is further glossed in paragraph 2.773, page 2-981. Furthermore, the applicant seems to ignore the advise of his own consultant who recognizes the importance of the site to migratory birds on page VII-13.

Response FWS-27, TU-6:

The discussion on avifauna on page 2-981 of the Draft EIS was not elaborate, since the description of birds inhabiting each study area and biotic community on the Lakefront site was presented elsewhere in Chapte Two. Specifically, paragraph 2.773 referred the reviewer to Table 2-398 which describes the relative abundance and period of residence of birds observed on the site.

The portion of the Lakefront site bordering Lake Erie is important in terms of migratory waterfowl usage. There was no intent to downplay the significance for these species. However, appropriate changes in the text of this statement have been made to eliminate any potential for misunderstanding.

Paragraph 2.717 of the Draft EIS indicates that Ashtabula County has sufficient vegetative cover to support a variety of wildlife, but does not draw any conclusions regarding sustenance of displaced migratory birds.

Comment FWS-28:

The FEIS should include a brief description of the ichthyoplankton sampling gear and should mention the duration of plankton tows. Presentation of ichthyoplankton sampling results is very confusing.

Comment FWS-37:

The FEIS (paragraph 2.853) should mention the mesh size and dimensions of gill nets and seines used to collect adult and juvenile fishes. The time and duration of gill net and seine collections should be tabulated to show the size, range and number of individuals for each species at each sampling station on each sampling date. This information is prerequisite to final selection of intake and discharge sites where adverse impacts to fishes would be minimized. In this connection, it is somewhat alarming to note (see paragraph 2.854, page 2-1164) "the greatest total catch per unit effort occurred at LE9, averaging 54.9 individuals per gill net set". Station LE9 is the proposed intake site.

Response FWS-28, FWS-37:

Data on ichthyoplankton and adult fish presented in Chapter Two of the Draft EIS have been revised and updated. The text, tables, and figures that have been added to this statement provide appropriate descriptions of sampling methods and collection results. Although the data presented is summarized in a general format, enough information is provided to allow for an effective and comprehensive review. Incorporation of the detailed tables and discussions for each individual species, including the date collected and station location is beyond the scope of this environmental impact statement.

More detailed discussions concerning sampling techniques and the results of the field investigations conducted at the Lakefront site can be found in the written reports prepared by Aquatic Ecology Associates Inc., a consultant to the U. S. Steel Corporation. These documents are available for public inspection at Corps of Engineers offices in Buffalo, NY, and Cleveland, OH, and libraries in Erie, PA, and Conneaut, OH. In addition, each AEA field report was routinely provided to the U. S. Fish and Wildlife Service as well as the other Federal, State, and local agencies serving on the Lakefront plant technical team.

In summary, the addition of the requested information would unnecessarily add to the size of the EIS, encourage redundancy, and obscure and dilute critical facts and issues needed to perform a sound analysis of Environmental Impact. Recent regulations proculgated by the Council on Environmental Quality on the preparation of Environmental Impact Statements also discourage this practice (Federal Register, 29 November 1978: Title 40, Chapter V, Parts 1500-1508).

Comment FWS-29:

Refer to EDH-4

Comment FWS-30:

Paragraph 2.843 states the largest collection occurred at nearshore Station LE10, but paragraph 2.844 states the largest nearshore collections generally occurred at Stations LE2 and LE4. Furthermore, the latter statement is contradicted by data in Table 2-423 which show LE2 and LE4 collections during June and early July 1977 were lower than collections at LE1, LE5, or LE10.

Response FWS-30:

Updated information and revised tables summarizing the results of the ichthyoplankton sampling effort have been incorporated into Chapter Two of this Final EIS. Site specific data are also included in Appendix D of this statement for those individuals interested in perfcrming a more detailed review.

Comment FWS-31:

Refer to EDH-4

Comment FWS-32:

Refer to EDH-4

Comment FWS-33:

Refer to EDH-4

Comment FWS-34:

Refer to EDH-4

Comment FWS-35:

Refer to EDH-4

Comment FWS-36:

Refer to EDH-4

Comment FWS-37:

Refer to FWS-28

Comment FWS-38:

Refer to CON-10

Comment FWS-39

Refer to CON-10

Comment FWS-40:

Tables 2-432, 2-433, 2-436, and 2-437 deal with "average numbers of benthic macroinvertebrates in Turkey Creek and Raccoon Creek." The FEIS should clarify how these averages were derived. It might be more informative to list the range of values as well as an average.

Comment FWS-41:

Paragraph 2.888 on page 2-1188 mentions Table 2.432a, relating to Turkey Creek benthos. We found no such table in the EIS.

Response FWS-40, FWS-41:

Benthic macroinvertebrate data were recorded in terms of the number of individuals per square meter of substrate. Triplicate samples traversing the stream at each sampling site were used as the basis for these calculations. Tabular data on benthos has been updated and included in Chapter Two of this statement.

Comment FWS-42:

Refer to CON-10

Comment FWS-43:

Refer to CON-10

Comment FWS-44:

Paragraph 2.913, page 1215, in a discussion of the occurrence of rainbow trout in Turkey Creek indicates that, "The presence of such large individuals in a small, headwater stream was unusual." The Fish and Wildlife Service does not believe that the presence of adult rainbows in a stream having very good water quality, acceptable water temperatures, and a good dispersion of required habitat parameters can be considered unusual. Several adult individuals, 18 to 20 inches in length, were taken in electrofishing surveys during the spring of 1977 between the B&LE tracks and State Line Road. Adult rainbows were also taken in the vicinity of TC4 next to Rudd Road. This small section of Turkey Creek, perhaps 100 yards, was thought to have been channelized at one time, although this is unsubstantiated. The reader should not be led to believe that use of Turkey Creek by adult salmonids is an unusual occurrence. Also of importance and significance in late December 1977 or early January 1978 to be engaged in redd making activities in the vicinity of station TCT-2. During subsequent investigations in May 1978 regarding the viability and/or success of three or four redds, several rainbow fry were eventually recovered and positively identified. These facts and other pertinent fisheries data that are to appear in a Final Interim Report by the applicant must be discussed in the FEIS regarding their relevance to the evaluation of Turkey Creek.

Comment TU-8:

The applicant feels that the presence of rainbow trout in Turkey Creek is unusual. Cf. Paragraph 2.913, page 1215. It is not unusual as fishermen and the U.S. Fish and Wildlife Service know.

Response FWS-44, TU 8:

Chapter Two of this Final EIS has been revised and updated to include an accurate description of salmonid populations including relative ages and occurrence. Redd making activities and other data contained in the referenced interim report have also been included.

No information to exists that would tend to support the reviewers contention that the above referenced section of Turkey Creek was channelized.

Detailed discussions concerning salmonid usage in Turkey Creek are contained in the various field reports prepared by Aquatic Ecology Associates. These documents are available for public inspection at the Corps of Engineers offices in Buffalo, NY, and Cleveland, OH, and the public libraries in Conneaut, OH, and Erie, PA. In addition, each AEA field report was routinely provided to the U. S. Fish and Wildlife Service as well as the other Federal, State, and local agencies serving on the Lakefront plant technical team.

Comment FWS-45:

Paragraph 2.940 incorrectly states that the blue pike is listed as threatened by the federal government. In fact, in the October 27, 1976 publication of the Federal Register, the U. S. Fish and Wildlife Service lists the blue pike as endangered, not merely threatened.

Response FWS-45:

The appropriate section of the statement has been corrected in response to the comment.

Comment FWS-46:

Refer to DA-1

Comment FWS-47:

Refer to DA-1

Comment FWS-48:

Paragraph 4.619 mentions a 1,290-acre construction zone, but according to paragraph 4.623, the construction zone would occupy 600 acres. This additional discrepancy regarding acreage to be developed should be explained or eliminated.

Comment FWS-65:

According to paragraph 6.18, proposed Lakefront plant facilities would require development of about 1,800 acres. This estimate is nearly 50 percent higher than the figure (1,290 acres) appearing elsewhere in the EIS. The discrepancy should be explained or eliminated.

Response FWS-48, FWS-65:

The FEIS has been revised on the basis of the following assumptions. The total "project site area" (5,442 acres) includes all land controlled by U. S. Steel and its subsidiaries. This land extends south to the Northfolk and Western Railroad and further south near State Line Road to Route 90 (See Figure 2-153). The "Lakefront Site" (2,760 acres) is the fenced-in area which is located south of the Penn Central Railway and is bounded on the north by Lake Erie. Within this area is located a "primary impact area" (1,766 acres), a "Greenbelt area" (504 acres) for Turkey Creek, and approximately 487 acres of undeveloped land. The 1,766 acres includes all of the areas where construction is proposed. Those figures presented in the DEIS represented construction zone acreage for different types of structures (i.e., primary mill components and auxiliary components). Since this activity would effectively denude the work site and destroy the existing habitat regardless of the type of development, there is no reason for differentiation in the impact analysis. Accordinoly, the 1,290 and 800-acre figures shown in the DEIS have not been deleted from this Final EIS.

Comment FWS-49:

Paragraph 4.624 mentions two red maple trees that are larger than Pennsylvania's existing record red maple. Some provision should be made to preserve these specimens if the plant is constructed.

Response FWS-49:

According to the December 1978 "Fish & Wildlife Management Plan" proposed by the applicant, only one red maple is situated in an area where development is planned. While larger than previous records for the species in the State, this tree is the smaller of the two found on the Lakefront site. It is possible that larger red maples exist in Pennsylvania since there is no systematic Statewide "big tree" survey procedure in effect. No provisions have been made to preserve the single red maple located in the developed portion of the project site. The future of the other record trees would be determined in conjunction with final siting of solid waste disposal areas, or during any subsequent permit review actions for further site modifications not presently anticipated.

Comment FWS-50:

Refer to ADN-6

Comment FWS-51:

In paragraph 2.481, page 2-620; paragraph 2.889, page 1188; paragraph 2.917, page 1218; and in paragraph 4.692, page 4.781 near the bottom, reference is made to "...recent clearing and grading operations" that apparently decimated benthic invertebrates in a Turkey Creek tributary east of State Line Road and north of the Penn Central tracks. The EIS fails to mention that several hundred feet of the tributary were put in a pipe culvert and covered with fill. This stream channelization and its effects should be described in greater detail.

Response FWS-51:

The construction activities at the Bessemer and Lake Erie Railroad yard were referenced only because they offered a possible explanation for the type of benthic invertebrate populations found downstream of the worksite.

Construction of the railroad yard is part of an overall plan to enlarge and modernize the coal handling facilities in Conneaut Harbor. Company officials have stated that this expansion is related to a long-term fuel supply agreement between the Pittsburgh and Conneaut Dock Co. and certain utility companies in the Province of Ontario. These activities are not related to the lakefront plant proposal, therefore, discussion in the Environmental Impact Statement is not considered appropriate.

Further, the construction site was inspected on several occasions during 1978 to determine if the work underway was subject to Corps of Engineers regulatory authority. The results indicated that culverting had been placed in several tributaries above the headwaters limit and that these structures were authorized by nationwide permit. (33 CFR 323.4-2(a) (1)) Written notification of this determination was forwarded to the Pennsylvania Fish Commission and the U. S. Fish and Wildlife Service Office in State College, Pennsylvania on 29 September 1978.

Comment FWS-52:

The Corps staff's effort to estimate ichthyoplankton entrainment loss (pages 4-788 to 4-792) is commendable. However, the data on which the estimates are based should appear in the EIS. The analysis is not possible from information (Tables 2-422 to 2-428) now in the draft EIS. Without these data, the reader cannot check the Corps' analysis and cannot compare the proposed intake location (LE9) with other possible intake sites.

Response FWS-52:

The raw data used to estimate entrainment losses has been added to the EIS in tabular form, and can be found in Appendix D. In addition, this appendix has been cross referenced with the appropriate sections of Chapter Four.

Comment FWS-53:

Refer to DOC-1

Comment FWS-54:

Refer to DOC-1

Comment FWS-55:

Paragraph 4.772 is misleading in several respects:

(a) Black bullhead cannot be considered common in the area. Only six were collected in Conneaut Creek and only one was collected in Turkey Creek, according to Tables 2-430A, 2-440, 2-442 to 2-447.

(b) Not one but four specimens of American brook lamprey were collected in Raccoon Creek, according to Table 2-441.

(c) Sea lamprey is listed as Indeterminate by the Commonwealth of Pennsylvania. The species is not mentioned in this paragraph although Table 2-440 shows one specimen was caught in Raccoon Creek during July and one during August 1977.

Response FWS-55:

Text, tables, and figures in Chapter Two concerning aquatic biota have been extensively revised and updated. Corrections have been made in response to the above comment. Black bullhead is listed as being "present" in Turkey and Conneaut Creek samples. Nine American brook lamprey specimens were taken from Raccoon Creek and one specimen was taken from Conneaut Creek. The sea lamprey genus, Petromyzon, was incorrectly listed on Table 2-440 of the Draft EIS. Sea lamprey were not collected during the applicant's sampling program. However, during their 1977 survey, the U. S. Fish and Wildlife Service collected ammocoetes of this species in Conneaut Creek and Raccoon Creek, but not in Turkey Creek.

Comment FWS-56:

Refer to CRG-37

Comment FWS-57:

Refer to CRG-37

Comment FWS-58:

The discussion of mitigation and compensation measures is also hypothetical. Phrases such as "could be lessened," "could be achieved," "could be acquired," "could be seeded," "could be replanted," "could be added," "could be taken," "could include," appear on pages 5-35 to 5-47. There is no explanation of who would be responsible for implementing the measures mentioned. Indeed, there is no assurance that they would be implemented at all.

Comment FWS-59:

Discussion of measures to mitigate damage to the site's wildlife is not sufficiently detailed. The final EIS should specify the location and acreage of "undisturbed woodcock habitat" and spotted turtle habitat "of similar quality and carrying capacity" (paragraph 5.93), of "land containing standing water and tall shrubs," and of "other tracts" for wildlife management (paragraph 5.94).

Comment FWS-73:

In addition to comments on the adequacy of the environmental impact statement, we also wish to use this opportunity to provide preliminary comments pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). Based on the available information and field reviews, the Department of the Interior has serious reservations about the project as proposed because of its adverse impacts on fish and wildlife resources. Our principle concern at this time centers around the lack of adequate measures to mitigate and compensate for adverse project impacts. We would be extremely reluctant to concur in the issuance of any permit unless the project includes mutually agreed upon mitigation and compensation measures as part of project cost. These measures should be detailed in the final environmental impact statement.

Response FWS-58, FWS-59, FWS-73:

As mitigation for wildlife habitat loss at the proposed plant site, the applicant has designated a 456-hectare (1,127-acre) section of their property to be used as a wildlife refuge, where vegetation may be managed to enhance the habitat for selected wildlife target species, primarily woodcock. The applicant would coordinate with the Pennsylvania Game Commission and the Ohio Division of Wildlife while providing opportunities and resources to conduct research on the proposed mitigation area and a 205-hectare (507-acre) area not slated for development inside the plant perimeter fence. In addition, the applicant proposes to donate a 38-hectare (94-acre) forest tract to be used as a new Pennsylvania Game Lands unit or as an addition to Raccoon Creek County Park. Maps delineating seral ecotypes, typical resident woodcock feeding habitat, and the proposed wildlife mitigation areas are presented in Chapter Two of this Final EIS.

The Draft EIS described a proposal to fill the lower 1.2 kilometers (0.75-mile) of Turkey Creek and construct a diversion channel to Conneaut Creek. In response to comments made by the agencies and the general public, the applicant has rejected the original proposal and adopted a new plan which calls for culverting a portion of Turkey Creek and eliminating the diversion channel. Under the new plan, Turkey Creek would be culverted between State Line Road and a point approximately 460 meters (1,500 feet) upstream from Lake Erie. The culvert would have an inside diameter of 3.66 meters (12 feet) and is expected to provide adequate drainage during a 100-year flood event. Approximately 2,285 meters (7,500 feet) of winding streambed would be straightened to permit installation of a culvert 1,707 meters (5,600 feet) in length. In order to encourage upstream salmonid migration, the applicant proposes to install a system of baffles and resting pools along with a skylight system that will provide subdued lighting throughout the entire length of the culvert.

Low flow characteristics of Turkey Creek present a formidable barrier to salmonid migration under both natural and project related conditions. Recognizing this problem, the applicant proposes to augment flow rates during peak migration periods by diverting a portion of the plant intake water into the upstream end of the culvert. The 3.8 kilometer (2.4 mile) reach of Turkey Creek on the applicant's property upstream from the culvert would be preserved in its natural state, and would be available to Pennsylvania Fish Commission personnel for management of aquatic species.

The applicant would encourage the Ohio Division of Wildlife to use the lower approximately 460 meters (1,500 feet) of Turkey Creek extending from the mouth to the proposed culvert as a salmonid stocking and nursery area. The applicant would also provide stream habitat improvements in an effort to enhance the fishery potential of the area. In conjunction with this habitat improvement program, fishermen access by boat to the mouth of Turkey Creek and the adjoining beach area would be permitted.

Comments received on the Draft EIS indicated that the applicant's proposed pier extension and new dock would destroy an unnecessary amount of benthic habitat and would impede water circulation in Conneaut Harbor. As mitigation, the applicant proposes a new open pier and dock design which would occupy a total of approximately 0.51-acre of bottom habitat, or about one-half the bottom area occupied by the original design. Water circulation average hydraulic cross sectional area of the new design would be two times greater than the existing undisturbed cross sectional area behind the pier. Excellent water circulation would be permitted by the new proposal.

The planned location for the proposed plant intake structure is about 5,000 feet offshore at the 30-foot depth contour. However, final siting will be determined at a later date through the NPDES permitting process. As mitigation for aquatic organism entrainment, the U.S. Steel Corporation has agreed to perform additional ichthyoplankton sampling to be used in determining a location which will minimize impacts to fish eggs and larvae.

In order to minimize fish impingement on the intake structures, the applicant has agreed to use the Best Available Technology (BAT) which has been demonstrated to be practicable. Wedge wire screens or equivalent proven devices would be installed if these methods are considered BAT during the project's detailed design phase. Final intake design would be determined by NPDES permitting procedures, not the Department of the Army permit.

ment FWS-60:

Paragraphs 5.92 and 5.93, page 5-34, inadequately describe the impacts on resident woodcock populations. It appears to indicate that the "overall effect" will simply be the loss of one full year class. Actually there will be a permanent loss of 90 percent of a major nesting area and most likely a 100 percent loss of all existing habitat within 10 years of plant operation. Impacts cannot be simply described as affecting one year class. Production capabilities will be eliminated entirely from this site forever. Secondary growth impacts on remaining suitable habitat in the area, which there has been no attempt to quantify, will probably be equally devastating over the long term.

Comment PGC-14:

Paragraph 4.185 (page 4-208) indicates wildlife displaced by plant construction would migrate to other areas and possibly be added to these off-site populations. This is a false assumption. As wildlife populations usually exist at carrying capacity, the displaced populations would cause increases above carrying capacity. Natural mortality factors will reduce these to carrying capacity, thus effectively and permanently destroying the displaced populations.

Comment TU-11:

12. Paragraphs 5.92 and 5.93, page 5-34 say that there will be a loss of a one year class of woodcock due to loss of a major nesting area. That estimate is inadequate. There will be more loss, and the biological statement is not adequate.

Response FWS-60, PGC-14, TU-11:

Wildlife habitat tends to be the limiting factor, not total numbers. If habitat is available, wildlife would occupy such areas at numbers approaching or exceeding the

carrying capacity. However, if a displaced population (project site wildlife) is forced to immigrate into other areas at carrying capacity, stress, starvation, and disease would reduce the population of the area. The impact will be a reduction of the population equal to or greater than the immigrating population. The appropriate sections of this statement have been modified in response to the above comments.

Comment FWS-61:

Refer to EA-1

Comment FWS-62:

Alteration of depths and suitable substrate within the harbor will also cause major impacts associated with required dredging activities along with potential water quality problems as discussed in paragraph 5.115, page 5-44.

Response FWS-62:

Corps staff concurs that alterations of over five acres of existing harbor substrate may significantly affect ichthyoplankton productivity for this area. Maintenance dredging and increased harbor activity will tend to degrade water quality and effect bottom perturbations rendering the impacted area less desirable for fish fauna.

Comment FWS-63:

Alternatives/Layout

The discussion of alternative plant layout (paragraphs 6.7 and 5.8) deals only with displacement of the entire steelmaking complex about one-half mile east. It should mention the rearrangement of facilities (relative to each other) that are now proposed for the Turkey Creek ravine. For example (refer to Figure 1-4 on page 1-21):

(1) Oil storage could be relocated 150 meters west

(2) Sinter plant could be relocated 200 meters east

(3) Lime plant could be relocated 200 meters east

(4) Powerhouse could be relocated 100 meters east

(5) Coal blending could be relocated 150 meters west and parallel to coal storage area rather than parallel to W1200 grid line

(6) Coke ovens could be oriented in the east-west axis and centered at W0950, S1250

(7) Coke oven gas cleaning could be centered at W1100, S1000

With this arrangement of facilities, a "greenbelt" could be maintained along Turkey Creek up to the 630-foot and 640-foot contours, as was suggested in the April 21, 1977 letter to the applicant from the Corps of Engineers, Buffalo District.

Comment HC-1:

A suggestion for the proposed U. S. Steel Mill near Conneaut, Ohio, would be to relocate the planned mill farther east on the plant site inside Pennsylvania. This might enable them to preserve Turkey Creek at its present natural port at the lakefront and the runoffs from the hills of Pennsylvania, thus enabling preservation of the cold-water creek.

It would appear from your maps of the plant site's present location that U. S. Steel intends to border their facilities on the P&C Dock Company storage facilities. Then, if they relocated farther east of the present site, obviously more roads and bridges would be necessary although P&C storage facilities would still be very near and accessible.

Response FWS-63, HC-1:

Although the coal blending area could be moved to the west away from the creek channel, insufficient space would be created to accommodate the coke ovens and by-products plant. These facilities would have to be relocated to the east of the creek bed. In this regard, the distance between the coal beds and the coke ovens would increase from about 300 meters to about 900 meters for the first battery pair and 1,200 meters for the second battery pair. Further, the displacement would require that the raw coal overhead conveyor cross Turkey Creek at a point where the buffer zone is 500-600 meters wide. To preserve this area, the applicant believes that an unsupported conveyor system would be needed to span the creek. However, such a structure would be costly and impractical from an engineering design and safety standpoint.

Similarly, the configuration of the iron ore pile and reclaim station would have to be altered to minimize their effects on this buffer zone. To achieve this relocation and retain the same ore capacity, the storage pile would have to be widened so that it would occupy a major portion of the lake bluff to the west of Turkey Creek. This rearrangement would require the displacement of the oil storage area to the east where the lime and sinter plants are now situated.

By the same reasoning, the lime plant and sinter plant would also be relocated. Since coke oven gas (COG) is the primary fuel for the lime plant, this facility must be situated relatively close to the coking operation. To minimize the distance between these process units and at the same time preserve the buffer zone the lime plant would have to be moved 700 meters to the east. Modification of the raw material

transfer system would also be required. In this regard, the overhead conveyor for the iron and limestone, which had been situated 300 meters west of the lime plant and about 750 meters west of the sinter plant and stockhouse, would be separated from these facilities by distances of 1,200 meters and 1,500 meters, respectively. The conveyor would traverse the creek at a point where the buffer zone is 500 meters wide. To minimize the impacts on Turkey Creek and the adjoining riparian habitat, the applicant believes that an unsupported span would be required at this location as well.

The new locations for the coke plant, lime plant, and sinter plant would overlap the planned sites for the iron and steelmaking facilities. To preserve the integrity of their design both facilities would have to be moved as a unit about 700 meters to the east. In addition, the water treatment facility that receives blowdown from the coke and sinter plants, iron and steelmaking process, and the rolling mills would be displaced a corresponding distance eastward.

The applicant must have adequate vehicle access throughout the Lakefront plant site. Since the rerouting of plant access roads around the buffer zone is impractical, bridges would have to be constructed at strategic points along the entire length of the creek. Such crossings would provide a source for spillage of raw materials, process chemicals, by-products, and the accidental introduction of solid wastes into Turkey Creek. Low-level discharges of this type could degrade water quality over the long-term and have a chronic adverse effect on the aquatic and terrestrial biota.

Relocation of the plant would preserve Turkey Creek and its riparian habitat. However, this water course would traverse a large industrial complex where a number of process units are situated just outside the recommended limits of the buffer zone. Under these circumstances, the potential for introductions of atmospheric pollutants and contaminated runoff into the creek and surrounding habitat are high.

Movement of the process facilities 700 meters or more to east would require the commitment of upland habitat which has already been demonstrated to be important to certain wildlife species.

Considering the questionable benefits associated with the preservation of Turkey Creek and its buffer zone, coupled with the added losses of terrestrial habitat, it appears that such a relocation scheme would be impractical. Instead, the applicant's revised proposal to culvert a portion of Turkey Creek and manage on-site fish and wildlife resources represents a more viable alternative.

Further discussion of the relocation scheme is contained in Chapter Five of this Final Environmental Impact Statement.

Comment FWS-64:

Refer to A-4

Comment FWS-65:

Refer to FWS-48

Comment FWS-66:

Refer to DOC-1

Comment FWS-67:

Refer to DA-1

Comment FWS-68:

Refer to DA-1

Comment FWS-69:

Refer to FWS-8

Comment FWS-70

Refer to DOC-6

Comment FWS-71:

Refer to EPA-77

Comment FWS-72:

Refer to DA-1

Comment FWS-73:

Refer to FWS-58

Comment GA-1:

A primary concern is the location of the lake discharge point. The regulatory agency which controls the discharge should also have interest in downstream water uses. Without that interest, enforcement personnel and politicians may lack a proper mix of concerns. The present proposal calls for location of the discharge point in Ohio with all downstream uses in Pennsylvania. Adequate safeguards are not provided to the Pennsylvania residents through regulatory agencies responsible to them and their elected representatives. The mere provision of operation reports and lake monitoring as described by Wesley Gilbertson at the West Springfield hearing are insufficient to insure forewarning of noncompliance. Lake monitoring is difficult as is selection of a representative location due to varying weather conditions, in particular, wind. Winter monitoring will be almost impossible and changes will be subtle and almost impossible to note under normal sample analysis accuracies. Further, no guarantees have been or can be made that the State of Ohio will honor the requests of Pennsylvania, particularly with the present declared opposition of the Governor of Ohio to the policies of the U.S.E.P.A. The outfall should be redirected to discharge in Pennsylvania. Such a relocation should not be difficult and should not be met with resistance by U.S. Steel if they are committed to environmental protection as they state. I. that condition is not met or if other guarantees are not provided, then I must take a position of opposition to the complex.

Response GA-1:

A delegated State such as Ohio has the lead role, subject to U.S. EPA overview, in the drafting, public noticing, and issuance of NPDES permits. It is the responsibility of the U.S. EPA to review these processes and determine if the proposed permit is consistent with Federal regulations and policies, and any 208 plans, and provides adequate opportunity for public comment. The impact on the waters of adjoining States must also be considered. The regional review will result in a concurrence or a conditional concurrence being transmitted to the State. If a conditional concurrence is given, the State must notify the region if it does not intend to comply with any permit changes or additions requested. Upon receipt of notification not to comply, U.S. EPA would formally object to the issuance of the permit and could veto the permit if issued by the State. If the issued permit is vetoed, U.S. EPA after public notice would propose to issue its own NPDES permit. In all likelihood, before U.S. EPA would issue a separate permit, the State would request a public hearing which must be held by U.S. EPA. The public and the State would have opportunity again to make their views known before the permit could be issued by U.S. EPA.

Although both Ohio and Pennsylvania Lake Erie water quality standards are presently undergoing revision, both sets of criteria are based upon high quality water use classifications. For most parameters, the controlling use classification is Exceptional Warm Water Habitat (Ohio) or Cold Water Fish (Pennsylvania). The Ohio standards tend to be more stringent in this case.

NPDES permits are required to be conditioned for compliance with water quality standards, not a State's own interests. A discharge which violates its permit conditions can be prosecuted by either Federal or State authorities. The U.S. EPA has advised the Corps that Ohio EPA will submit a draft proposed permit to the State of Pennsylvania for comments. Region III, U.S. EPA in Philadelphia, which is responsible for review of water quality in Pennsylvania's section of Lake Erie, will also comment.

In turn, Region III will be requested to make certain that the Pennsylvania regulatory agencies received copies of the public notice and draft permit for their review. The comments and recommendations resulting from the State and Region III reviews will be submitted to Ohio EPA and Region V, U.S. EPA, for consideration in the drafting of the final NPDES permit.

Comment GA-2:

Refer to CRG-24

Comment GA-3:

Refer to CRG-51

Comment GA-4:

The outfall itself should be studied to determine the feasibility of including means of attaching bypasses in case of pipeline breaks. Perhaps tees and valves could be interspersed along the outfall to allow areas to be isolated, bypassed and repaired if there is a failure. It is inconceivable that a plant of this size will be shut down for an indeterminate length of time to allow for outfall repair. Thus, provisions to allow repair to occur while the plant remains in operation would appear to be appropriate.

Response GA-4:

Wastewater outfalls have a history of being very reliable and the suggested devices would be extremely expensive to install and maintain. Proper engineering design does not incorporate such redundancy into this component of a plant. Therefore, such a course of action is considered to be unnecessary.

Comment GG-1:

The Fund position is that air pollution is now causing damage to the economics of grapevines and grape crops in Western New York State. There are 20,000 plus acres of vineyards in Western New York State located from 50-85 miles east of the proposed Lakefront Steel Mill. These vineyards lie downwind of the proposed facility in the Lake Erie basin which acts as a natural trough trapping the air pollutants emitted by this facility.

Comment GG-2:

Air quality in the Western New York vineyard areas will likely be adversely affected by emissions from the proposed Lakefront Steel Mill. Atmospheric concentrations from sulfur dioxide, ozone and other pollutants will be increased. At least some of such pollutants, whether acting together or individually, are known to cause injury and damage to grapevines and grape crops. The extent to which the proposed Lakefront Steel Mill will add to such pollution and damage to Western New York State vineyards is not known and has not been, in the Fund's opinion, adequately addressed in the Draft Environmental Impact Statement.

Comment NY-1:

The New York State Grape Production Research Fund does not believe that the Draft Environmental Impact Statement for the Lakefront Steel Mill satisfactorily addresses the impact of steel mill emissions on the grape industry in New York State. Please review the EIS to determine if this is correct. It is essential that the impact on New York's grape industry be minimized.

Comment RW-2:

Emission from the proposed plan will cause a definite deterioration in air quality. Among other things, sulfur dioxide produced by the plant may very likely come down from the sky at certain times in the form of a sulphuric acid rain, causing damage to agricultural crops and nursery stock.

The emissions of sulphur dioxide, carbon monoxide, hydrocarbons, and other materials can cause adverse health problems over the long run. Saying these emissions will fall within certain accepted standards is likely saying a "little poison won't hurt you." It is a proven fact that incidents of cancer and respiratory ailments a: much higher in industrial areas than in rural areas. I see reason why we should lowe: our odds.

Response GG-1, GG-2, NY-1, RW-2:

The area potentially impacted by the projected overall decrease in nonmethane hydrocarbon air emissions from the emissions offset for the proposed plant extends as far east as western New York State. Therefore, it is expected that the proposed plant would have potentially positive net impact on the grape industry of New York State, but one which would be so small as to be difficult, if not impossible, to detect. The long-range transport of hydrocarbon emissions and interactions which may occur in the atmosphere were discussed in Chapter Four of the draft EIS.

Although the draft EIS did not explicitly indicate the impact of proposed mill emissions on the Grape Belt area of New York State, it did address the projected long-range transport of SO_2 and the reactions which the pollutant undergoes during transport (sulfate aerosol formation, acid rain, interaction with metals in particulates, etc.). Calculations made by the applicant's consultant show that the maximum annual average increases of sulfate will occur in a 70° arc east-northeast of the proposed plant. Maximum annual sulfate changes are expected 30 to 100 kilometers downwind of the plant and will not exceed 0.1 ug/m^3 compared to baseline concentrations of 7 to 15 ug/m^3. During adverse meteorological conditions, sulfate concentrations may be increased by 1 to 7 ug/m^3 on a 24-hour average compared to backgrounds of 19 to 35 ug/m^3. This could occur at most once in a three-year period between 20-50 kilometers downwind of the plant. As indicated in Chapter Four of the EIS, the ambient sulfate concentrations would remain in the range of 7-15 ug/m^3 while concentrations reported to cause injury to agricultural and pasture crops have ranged from 100,000 to 158,000 ug/m^3. The maximum short-term SO_2 increment was modeled as far as Erie, PA. The worst case increment was calculated to be 3 ug/m^3. Worst case particulate levels at Erie, PA, are predicted at 2 ug/m^3 while the long-term average at this location is less than 1 ug/m^3. These values would decrease further downwind (i.e., toward the N.Y. State Grape Belt). The removal (washing out) of SO_2 by precipitation can lower the pH of rainfall reaching an area and thereby affect vegetation growth and soil chemistry. This is not expected to be a significant effect of the proposed plant because the low background pH of rainfall in the area would result in less SO_2 washout than would otherwise occur, and the multiple emission source origins of the plant would lessen the potential for high SO_2 concentration at any single point. A more detailed discussion is presented in Chapter Four of this final EIS. To determine the effect on any particular vineyard within the Grape Belt, it would be necessary to know the exact direction and distance from the proposed new source and data on ambient air quality for the particular vineyard concerned and even then exact prediction of increments from the proposed plant may not be possible. Overall, it is expected that the increments from the proposed mill would be low.

The National Primary and Secondary Ambient Air Quality Standards have been formulated to protect public health and welfare. These standards, established as a result of observed effects and epidemiological studies, have recently been reviewed by the National Academy of Sciences, National Academy of Engineering (NAS/NAE). This report indicates that primary health-related standards are now set at levels somewhat below

those at which adverse effects have actually been observed (National Academy of Sciences, 1974). The difference constitutes the safety margin. This report also found that "the evidence that has accumulated since the promulgation of the Federal ambient air quality standards...supports those standards." Any attempt to quantify human health effects from the plant's emissions is difficult since separation of health effects caused by the plant's emissions from effects caused by other point source emissions in the entire region may be impossible to assess.

Comment GG-3:

Refer to EDH-38

Comment GG-4:

1. Sulfur oxides - research has shown that sulfur dioxide (SO_2) can cause damage to grapevines.[3] Of particular importance is that there was a tremendous productivity loss in the year following the exposures to this pollutant and that there was not a direct relationship between induced leaf injury and productivity loss.[3]

2. Nitrogen oxides - These will not likely have a direct effect on grapevines or other perennial plants. However, nitrogen dioxide is a precursor in the photochemical generation of oxidants such as ozone and PAN.[4] Concentrations of these two pollutants may be maximal many miles downwind of the point source.[4]

3. The interaction of sulfur oxides and nitrogen oxides - The Fund agrees with the Corps assessment in Section 5.73 and 5.102 that the interaction of sulfur dioxide and nitrogen oxides with ozone could cause crop damage to grapes. Research has shown that mixtures of low concentrations of sulfur dioxide and nitrogen dioxide may injure several plant species and the synergistic interaction of these two pollutants can cause crop damage.[4]

4. Fluorides - Research has shown that grapevines are highly sensitive to fluorides.[4,5] Fluorides accumulate in the plant tissue and are therefore potentially more damaging over the long term to perennials such as grapevines than to annual vegetation.[2,4]

5. Heavy Metals - Very little information is available on the effects of heavy metals on grapevines or perennial crops. However, there is evidence that heavy metals can have a detrimental influence on nutrient cycling.[4]

6. Particulates - Research has shown that particulates may cause injury or inhibit photosynthesis of some plant species.[4]

7. Ozone - Grapevines in the Pennsylvania, Ohio, and New York State areas are already experiencing injury and damage due to ozone.[4] Research has shown that ozone-induced injury to grapevines can result in a reduction in soluble solids[1,5] and preliminary investigations indicate a possible reduction in yield as well. It has been estimated that it would cost in excess of one million dollars to combat ozone injury in the vineyards of New York State, Pennsylvania, and Ohio with chemical sprays.

8. The interaction of ozone and sulfur oxides - Very little research work has been done with woody species. However, research in New York State has shown that small increments of sulfur dioxide added to ambient air will increase the amount of ozone induced oxidant stipple injury to Concord grapevines, and will reduce soluble dioxide in the air may lower the threshold for ozone injury to grapevines.

9. Peroxyacetylnitrate (PAN) - Little is known about PAN injury ot damage to perennial crops. However, symptomatology studies suggest the presence of phytotoxic concentrates in the Eastern U.S.[4] and the precursors of this air pollutant will be emitted by the Lakefront Steel Mill.

10. Acid rainfall - The effects of acid precipitation on biological systems in urban areas has not been intensively examined. Research has shown that continuous acid precipitation could result in the impairment of photosynthetic and respiratory processes.[4] The Corps' suggestion that sulfate induced pH drop of 0.3 is too small to affect sensitive crops (Sec. 4.659) is untested. A small pH drop at the lower pH levels could be enough to reach the threshold for acid injury to vegetation.

Comment SAE-2:

Although your estimate of Lakefront Steel Mill ozone increments of somewhat less than 6% are "very rough" projections and are likely too small to detect in relation to ambient ozone fluctuations (Sec. 4.439, p. 4-528), any additional ozone would likely have adverse effects on sensitive vegetation. Levels of ozone already present in ambient air have been shown to damage agricultural crops such as grapevines (see references 1&2).

Comment SAE-3:

(B). The worst case of sulfur dioxide increment from the Lakefront Facility will nearly double the baseline 24-hour maximum for sulfur dioxide (Sec. 4.659, p. 4-762). Secondary development (p. viii of Summary) will result in additional sulfur dioxide emissions. Your statement that this is not expected to affect crop yields (p. 4-763) does not agree with your suggestion in Section 5.102, p. 5-38 or Sec. 5-73, p. 5-27, that critical levels of sulfur dioxide are dependent upon ambient levels of other pollutants. Although these levels of sulfur dioxide alone may affect only sensitive crops, in actuality the 24-hour sulfur dioxide impact on vegetation will not occur in the absence of other ambient air pollutants.

Comment SAE-5:

(D). I support your assessment of the need for additional air monitoring east of the plant site (Sec. 5.104, p. 5-39), and recommend that two additional monitoring stations be established. These stations should be located in separate rural areas near

sensitive crops such as grapevines. Continuous ambient levels of peroxyacetyl nitrate (PAN) and hydrogren fluoride should be monitored, in addition to continuous monitoring of ozone, sulfur dioxide, and the oxides of nitrogen.

Measurements of PAN have been almost nonexistent in the northeastern U.S. even though precursors are adequate and conditions are ideal for PAN formation. Symptoms of PAN injury have been observed on crops in S. Ontario, not too distant from the Lakefront Steel Mill site (3), and I have observed similar symptoms on grapevines in Western New York. Although PAN has been difficult to measure in the northeastern U.S., the U.S.E.P.A. has been working to resolve the monitoring problems.

Grapevines have been shown to be highly sensitive to fluorides (4,5). Fluorides accumulate in plant tissue and are therefore potentially more damaging over the long term to perennials than to annual vegetation. Amounts considered insignificant for any short period of time may prove to be significant if accumulated over many years.

Response GG-3, GG-4, SAE-2, SAE-3, SAE-5:

Paragraphs 2.705 and 2.735 of the DEIS acknowledged the importance of the grape industry in Ashtabula County, Ohio and Erie County, Pennsylvania.

Corps staff is aware of the studies which indicate that productivity loss occurs in the second year after exposure to certain levels of SO_2. Staff also realizes the difficulties involved in correlating leaf injury with productivity loss since there are numerous articles in the literature with conflicting views on the subject. Thus, while assessments of acute SO_2 injury may be possible, the current state-of-the-art does not allow for quantitative and qualitative determinations regarding productivity loss or damage to grapes (i.e., injury resulting in loss of value such as reduced sugar content of grapes) which may result from long-term exposure to low levels of SO_2. Thresholds have not been established for this type of exposure.

Effects on grapes or other perennial plants from precursors in the photochemical generation of oxidants which are emitted from the steel mill should not be significant since the offset policy would pertain to the facility. The area potentially impacted by the projected overall decrease in nonmethane hydrocarbon air emissions from the emissions offset for the proposed plant extends as far east as western New York State. Therefore, it is expected that in regard to ozone, the proposed plant could have potentially positive net impact on the grape industry but one which would be so small as to be difficult, if not impossible, to detect. The long-range transport of hydrocarbon emissions and interactions which may occur in the atmosphere were discussed in Chapter Four of the draft EIS.

The applicant has stated that fluorspar would not be used as a flux during plant operation, thus the potential for fluoride emissions is assumed to be insignificant.

Trace elements, heavy metals, and particulates have been shown to affect vegetation, but these studies are based on short-term acute exposure laboratory studies which may not give a good indication of the effects of low-level, long-term exposure in the natural environment. Acute injury is not expected to occur.

While the draft EIS did not explicitly indicate the impact of proposed mill emissions on grape growing areas, it did address the project long-range transport of SO_2 and the reactions which the pollutant undergoes during transport (sulfate aerosol formation, acid rain, interaction with metals in particulates, etc.)

Calculations performed by the applicant's consultant show that the increases in sulfate added to ambient concentrations would not approach levels known to damage vegetation. The removal (washing out) of SO_2 by precipitation can lower the pH of rainfall reaching an area and thereby affect vegetation growth and soil chemistry. In this regard, facility-related effects are not expected to be significant since the low background pH of rainfall in the area would result in less SO_2 washout than would otherwise occur, and the multiple emission sources would lessen the potential for high SO_2 concentration at any single point. A more detailed discussion can be found in Chapter Four of this final EIS.

The remaining comments pertain to synergistic effects of various combinations of pollutants.

Corps staff concurs that studies have demonstrated that various constituents from fossil fuel emissions and secondary pollutants have the potential to cause chronic damage to grapevines. However, staff does not believe that thresholds for damage to vegetation caused by synergistic effects have been demonstrated. Most studies, including those cited by the applicant, assess acute injury as opposed to damage caused by long-term exposure to low levels of pollutants. In regard to synergistic effects, the U.S. EPA concurs with Corps staff that the state-of-the-art is still too rudimentary to accurately establish impacts. However, if good methodologies are available to quantify and evaluate such effects at the time the applicant applies for a PSD permit, the applicant will be required to do the appropriate analysis, if deemed necessary by the U.S. EPA. Also, data to fully assess the potential synergistic impacts, if any, to agriculture could be part of the scope of the proposed monitoring program. The intent of the U.S. EPA National Primary and Secondary Ambient Air Quality Standards and the PSD regulations is to insure protection from any known or anticipated adverse effects associated with a new emissions source. In achieving these standards, EPA has indicated other considerations would be taken into account, such as costs, nonair-quality health, environmental impacts, and energy requirements.

Corps staff believes that these comments accurately reflect the present state-of-the-art and demonstrate the need for additional research in this nation and other nations of the world. Some of the research needs are presently being conducted. For example, the U.S. EPA is sponsoring two large-scale integrated studies in Portage, Wisconsin, and Colstrip, Montana, to develop methods to predict the bioenvironmental effects of air pollution. Additionally, the potential synergistic impacts, if any, to agricultural could be made part of the proposed monitoring program as previously indicated. Ultimately, any decisions regarding study or research needs are recognized as being within the special expertise and authority of the U.S. EPA.

Comment GG-5:

Refer to CRG-43

Comment GG-6:

Refer to CRG-43

Comment GG-7:

Refer to CRG-43

Comment GG-8

Refer to CRG-43

Comment HC-1:

Refer to FWS-53

Comment HUD-1:

The discussion under the heading of Low-Income Housing in Section 2.134 also makes reference to moderate income housing. Consequently, we suggest that the heading be changed to Low and Moderate Income Housing. The discussion should also be broadened to include the Section 221(d)(4) program which is aimed at providing housing within the price range of moderate-income families. The rent supplement, Section 235 and 236 programs are no longer active subsidy programs in the sense of new commitments being made. The principal subsidy program currently administered by HUD is the Section 8 - Housing Assistance Payments Program for lower income families established by the Housing and Community Development Act of 1974.

Response HUD-1:

The appropriate sections of this statement have been revised in response to the comment.

Comment HUD-2:

The discussion of impacts on housing beginning on page 4-100 focuses principally on the total demand for various types of housing units - new, existing, and temporary. The final statement should extend the analysis of housing impact and need into considerations of sales price and rent ranges as important elements of the demand picture.

Response HUD-2:

Although it is not explicitly discussed in the housing section of Chapter 4, the cost of housing was one of the three major elements used to define potential housing impacts. The methodology used to estimate housing demand was presented in detail in Working Paper IV, which was appended to the draft EIS. Simply, this methodology involves estimates of:

- the types of housing a household needs based on family size and typical number of bedrooms associated with various housing types,
- the types of housing a household can afford based on household and prices/rents for various housing types in the study area, and
- the types of housing available to a household based on housing types currently being built and projected to be built in each community.

The estimates of housing demand determined by these three factors are those presented in aggregate form in Chapter Four.

Comment HUD-3:

The discussion of low-income housing demand (p. 4-122) draws general conclusions on the future need for such housing, but does not present any basis for the assertion that, "the need for temporary or permanent housing associated with the proposed plant is not expected to directly affect the demand for low-income housing."

The Draft EIS unfortunately equates the issue of low-income housing with public housing in the discussion of Low-Income Public Housing (p. 4-122). As noted in the discussion of Low-Income Housing on p. 2-160, programs other than traditional public housing are available to meet the needs of low-income families.

Response HUD-3:

The discussion of low-income public housing indicates that the existing need for public housing occurs in the more urbanized sections of the study area and that the demand arises among the elderly segment of the population. As stated elsewhere, the demand for temporary or permanent housing due to the proposed plant would be derived from people earning an above-average salary who would therefore be able to afford the

existing or proposed new housing in the area. The proposed plant and its associated development are not expected to create an influx of elderly population. Therefore, no direct relationship between the proposed plant and the need for low-income public housing is anticipated. Indirectly, however, the initial increased demand for housing in the area due to plant-related in-migrants may cause an increase in rents, possibly forcing some elderly or low-income families to seek public assistance.

Paragraph 4.99 of this statement has also been revised in response to the above comment.

Comment HUD-4:

Refer to A-1

Comment HUD-5:

Paragraph 5.40 notes incorrectly that an application for a Community Development Block Grant is made through HUD Regional representatives (Philadelphia for the Pennsylvania communities and Chicago for the Ohio communities). This should be revised to read that application is made through HUD Area Offices (Pittsburgh for Pennsylvania communities and Columbus for the Ohio communities).

Response HUD-5:

The text has been revised in response to the comment.

Comment HUD-6:

Refer to CWP-7

Comment HUD-7:

Table 2-31 indicates 1980 Ohio population baseline projections as 104,400 and 1990 as 109,800. These figures vary from recently released projections being used by the Ohio EPA (under U.S. EPA requirements) which indicate a baseline projection for Ashtabula County of 102,244 for 1980 and 108,706 for 1990. This inconsistency should be resolved.

Response HUD-7:

A meeting held by the Federal Regional Council, the U.S. Army Corps of Engineers, and governmental and quasi-public agencies who have submitted substantial criticisms and/or developed other detailed population projections, met in Pittsburgh on 13 September 1978 to resolve the population problems. As noted from the minutes of this meeting (appended to this final EIS):

"The baseline (without the proposed mill and therefore without the 'impact increment') population projections in the D.E.I.S. are satisfactory, although some agencies (for example, E.P.A., Pa. O.S.P.D., and Ashtabula County Planning Commission) have either updated the projections since their inclusion in the D.E.I.S. or use other sources for their baseline data. The participants found no significant adverse consequences by using the baseline data in the D.E.I.S. without modification."

The 1990 Ohio EPA population figure mentioned in this comment is approximately one percent lower than the EIS projection. Use of this baseline population figure in the EIS in place of the original figure would not have any significant effect on the analysis of population or its impacts.

Comment HUD-8:

Refer to ADK-3

Comment HUD-9:

Figures 1-1 and 2-53 indicate a Conneaut Interstate Industrial Site south of U.S. 20 and the Proposed Lakefront Plant Site. It is unclear whether this is part of the site or not: It is also unclear what is the useage or intent for this site since paragraph 1.344 on p. 1-267 indicates no new off-site support facilities are expected. Further clarification regarding this area is needed, particularly in regard to its possible effect on secondary impact and/or industrial development.

Response HUD-9:

Although this site is owned by subsidiaries of U.S. Steel Corporation, it is not part of the proposed Lakefront plant site, and was not accounted for in calculating proposed plant acreage requirements. Furthermore, this site has not been reserved for industrial facilities economically linked to the proposed plant. The area is designated as a potential industrial site but statements as to its specific future use would be speculative.

Comment HUD-10:

We find no comment regarding the flood carrying capacity of Conneaut Creek in the event Turkey Creek is diverted to Conneaut Creek. Under any alternative eventually selected we recommend that the flood carrying capacity of both water courses, at a minimum, be maintained at existing levels. Additionally, communities affected by any diversion of flow should be notified of the project and its resultant effect on flood heights.

Response HUD-10:

The applicant no longer plans to fill and divert Turkey Creek. Instead, this watercourse will be left intact except for a section between State Line Road and Lake Erie which will be culverted. Since there will be no diversion of water to Conneaut Creek, there will be no impact on flood carrying capacity.

Comment JB-1:

Refer to EPA-27

Comment JB-2:

Increased police and fire protection will be required.

Response JB-2:

The comment that increased police and fire protection will be needed if the plant is built is noted. The impacts associated with this increase are discussed in Chapter Four of this Environmental Statement.

Comment JB-3:

Property taxes will have to be greatly increased to finance increases/improvements of items listed in Nos. 1 and 2 above [rural way of life and lack of sufficient infrastructure]. This will be particularly true during the construction period although if the records of other steel mill areas are used (i.e., Bucks County, Pa.) higher taxes will continue.

Comment RW-10:

The increase in population would carry with it increase in operating expenses in our school district along with a need to expand our high school. This cost could only be offset by an increase in property taxes. Population effected increases in other service, such as police protection, fire protection, more and better streets and traffic control would also be drawn from increased property tax and city income tax. The EIS states that new and larger sewage (treatment) facilities would be paid by government funding. This is a very vague explanation of how this sewage facility would be paid for by the government for it only means it is we the citizens who pay for it.

Response JB-3, RW-10:

It is true that the total amount of property taxes collected in Conneaut (particularly for the school district) would have to be increased. However, the tax rate, and thus the amount paid by an individual property owner, could be decreased because of the addition of the U.S. Steel plant to the tax base. The 1990 facility valuation of about $175 million is more than twice the value of baseline property. Estimates indicate that taxes paid by U.S. Steel would more than offset any added operating and construction costs, so that individual taxpayers would actually pay less taxes on their homes than under baseline conditions. If Federal funding were to become available for the anticipated sewage treatment plant expansion or expansion of the sewer system in Conneaut, the cost to individuals in Conneaut would be less. If new sewer users are charged a sufficiently high connection fee, the impact of new construction would be less on existing sewer users, i.e., Conneaut taxpayers. Although actual spending and taxing decisions are, obviously, made by individual local jurisdictions, the analysis indicates no requirement to raise property tax rates in Conneaut to finance needed infrastructure and services.

Comment JB-4:

It appears also that Pennsylvania will receive more tax dollars from the mill than Conneaut will.

Response JB-4:

In Ohio, assessed valuation of industrial property includes machinery, equipment, and inventories, in addition to the land and buildings. In Pennsylvania, only the land and buildings are taxed. Similarly, in Ohio the assessment ratio (ratio of assessed value to market value) is about 35 percent, while the comparable figure for Pennsylvania is 20 percent. Nonetheless, estimates indicate that the applicant would pay significantly more property tax dollars in Conneaut than in Springfield.

Due to the differences in the tax structure, the 1990 assessed valuation of the proposed plant is estimated to be $175 million in Conneaut and $25 million in Springfield. The property tax is assumed to provide the balance between expenditure

requirements and revenues available from other sources. Conneaut City is estimated to require about $235,000 in property tax revenues in 1990, of which the applicant would pay $160,000 or about two-thirds. Springfield Township is expected to be able to meet its expenditure requirements without any property tax collections. The Conneaut Area City School District is estimated to require property tax revenues of $4.3 million, of which the applicant would pay $2.7 million or 63 percent. The Northwestern School District (Springfield) would have to raise $2.5 million, of which the applicant would pay $1.3 million or 53 percent. Thus, the plant would pay more taxes in Conneaut on both an absolute dollar and percentage basis.

Comment JB-5:

The steel mill will provide few jobs for local people. Naturally, the mill will wish to employ trained steel workers. It is well known that the unemployed steel workers in the Youngstown area are already planning to obtain jobs and commute daily to Conneaut.

Response JB-5:

Distribution of employment between original residents of the study area and in-migrants is described in Chapter Four of this statement. The applicant's plans for transfers, training, and local hiring at the proposed plant are described in Working Paper III (which was appended to the DEIS). Overall, it is estimated that residents of the study area would obtain about 4,000 jobs at the plant itself (as well as most of the secondary jobs), or about 60 percent of the jobs not expected to be filled by transfers from other facilities owned by the applicant.

The proposed plant would not necessarily need to employ any trained steelworkers other than those transferred from other operations. While the majority of the workforce would be concentrated in the skilled and semi-skilled categories, most of these workers would be in maintenance-related jobs. Due to the high degree of plant automation, approximately 40 percent of the total workforce would be accounted for by maintenance workers. In addition, the applicant plans to put all new personnel (and most of its transfers) through a training program combining classroom and onsite training. Thus, it will not be necessary for most applicants to have any prior experience in steelmaking or related industries.

The applicant has indicated that first consideration for employment openings would be given to regional residents. In this regard, the company has planned a series of actions similar to those employed at its Baytown and Fairless Hills plants where large numbers of area residents were attracted to work at the steelmaking facilities.

Finally, the current availability of unemployed steelworkers in Youngstown or elsewhere is not considered to be a factor in Lakefront plant hiring. Few, if any, of these workers are likely to remain unemployed for the three-year period needed to bring the Lakefront steel plant on-line.

Comment JB-6:

Originally proponents of the mill claimed that satellite industries generated by the mill would employ local people. Now they have publicly admitted (after the low population increase figures were projected by the A. D. Little study) that the type of steel to be produced will not be conducive to satellite industries.

Comment SST-4:

The E.I.S. has not touched on the fact that associated industries, such as the Coho Generating Plant at Girard, Ohio, will be coming into the area simply because the steel plant is coming in.

Response JB-6, SST-4:

The indirect economic effects of the plant (i.e., satellite industries) and reasons that there would be limited activities of this type in the Regional Study Area were discussed in Working Paper III which was appended to the draft EIS. However, this limited indirect activity is expected to create about 1,300 new jobs, and it is estimated that some 90 percent of these could be filled by area residents. Similarly, there would be about 3,600 induced consumer-related new jobs, and many of these are expected to employ area residents. Original residents are expected to fill about 4,000 of the jobs at the proposed Lakefront plant. Even with some 1,350 supplementary earners (i.e., spouses) in the in-migrant labor force, the applicant estimates that more than 7,000 new jobs would be available for existing residents of the Regional Study Area.

The potential influx of industry as a result of siting the proposed Lakefront plant in the Conneaut area was discussed in Chapter Four of the draft EIS (p. 4-67). Proposals involving the construction of new power plants are based on the future energy needs of the population served by a given utility company, rather than the siting of major industrial manufacturing complexes. The proposed Coho generating station is a separate project that is not in any way related to the siting of the proposed Lakefront plant in the Conneaut area.

Comment JB-7:

If the steel mill pays higher wages than local industry, it may even cause Conneaut to lose industries (jobs) already available to local people.

Comment MAE-2:

It is quite clear that manufacturing establishments employing certain occupations will have a difficult time securing and/or maintaining needed manpower. For example, one

occupation that could be particularly adversely affected is millwrights. It is estimated that the new mill would attract from the Erie area as many as one third of the currently employed individuals in this occupation. Other occupations which could be severely impacted are trades helper, instrument maker, oiler, pipe fitter and heat treater, and approximately 30 otherjob classifications identified by Battelle.

Response JB-7, MAE-2:

The impact on current employment in various occupations is directly related to the number of employees with specific skills that the proposed plant would attempt to recruit. However, the applicant is planning to incorporate an extensive training program for all new employees. Training for maintenance and service personnel is expected to require only a few weeks, while other programs up to 12 months in duration would prepare new employees for skilled craftsman occupations.

If these training programs limit the need to hire experienced workers as planned, the proposed plant would have an adverse impact on other area manufacturers only if higher-than-average wages were paid. Although this analysis would also require specific job-by-job and plant-by-plant information, data presented in the EIS suggest that pressures on wage rates would be negligible. The average annual wage (in 1975 dollars) at the proposed plant is estimated to be $16,900 for skilled workers and $15,100 for semi-skilled workers, while the overage average for all plant workers is estimated to be $16,050. In 1975, primary metal workers in the Pennsylvania Principal Study Area earned an average wage of $17,410. The 1975 average wage for workers in other durables manufacturing was only 85 percent of the average wage for the proposed plant, as most of these industries have a smaller share of relatively high-paid craft workers than the metals industry.

Overall, it appears reasonable that the new jobs at the Lakefront plant would be most attractive to the less skilled (i.e., more easily replaced) workers at existing manufacturing establishments who would be able to take advantage of the training program to upgrade their skills and earnings.

Comment JB-8:

Refer to CCM-2

Comment JB-9:

Refer to CRG-43

Comment JB-10:

Refer to DA-1

Comment JB-11:

Refer to DW-9

Comment JB-12:

Refer to A-4

Comment JW-1:

1) Industrial pollution from such a large plant will cause numerous health problems (such as cancer and respiratory illnesses) to Erie area residents.

Response JW-1:

For certain types of emissions (e.g., SO_2 and particulates) projected increments attributable to the proposed plant added to projected background levels would remain below National Ambient Air Quality Standards (NAAQS), on both a long-term average and worst-case basis. The NAAQ Standards are set at levels which are intended to protect the public health, based on the body of scientific knowledge available at the time the standards were promulgated.

These standards, established as a result of observed effects and epidemiological studies, have recently been reviewed by the National Academy of Sciences, National Academy of Engineering (NAS/NAE). This report indicates that the primary health-related standards are now set at levels somewhat below those at which adverse effects have actually been observed (National Academy of Sciences, 1974). The difference constitutes the safety margin. There is not and cannot be any guarantee that such effects are completely absent even at the level of the ambient air quality standards. This report also found that "the evidence that has accumulated since the promulgation of the Federal ambient air quality standards...supports those standards." Based on the measurements of ambient air quality and modeling of increments attributable to the proposed plant, adverse health effects due to SO_2, NO_2, and particulates would not be expected on a long-term basis.

With respect to parameters for which no Federal standards have been set, i.e., sulfates, the level of expectation is subject to broad uncertainty. Moreover, for certain parameters, i.e., the polycyclic aromatic hydrocarbons (PAH), the concept of a

threshold below which no effects are observed may or may not be applicable. On balance, it must be noted that the populations in the Regional Study Area are exposed to such compounds in the normal course of human activity from numerous sources ranging from cooking food and smoking cigarettes to industrial and automobile emissions. Certain PAH compounds have been implicated in the incidence of human cancer on the basis of mamalian toxicology and worker epidemiology studies, but their role, if any, in the initiation and/or promotion of the disease through nonoccupational exposure in ambient atmospheres is not understood.

Any attempt to quantify human health effects, if any, from the plant's emissions is difficult since insufficient research has been conducted on long-term exposure to low levels of these atmospheric pollutants. Separation of health effects caused by the plant's emissions from effects caused by other point source emissions in the entire region would also be impossible to assess.

Residents of urbanized areas have been reported to experience greater incidence of certain diseases, including cancers, than residents of rural areas. For lung cancer, this increased incidence has been attributed to the "urban factor." The cause or causes of this "factor" are still subject to disagreement among researchers in the field, and its relationship, if any, to air pollution is uncertain.

Factors other than air pollution have been reported to correlate with, or bear noteworthy relationship to, the incidence of cancer mortality. These factors include community size, population density, and personal habits, e.g., smoking. To attribute an increase in the incidence of respiratory and other disease, including cancers of various sites, solely to increased industrial activity while not considering the influence of other factors can be misleading.

Comment JW-2:

Refer to A-7

Comment JW-3:

U.S. Steel has a past history of environmental lawsuits.

Response JW-3:

The majority of the applicant's environmental lawsuits stemmed from a failure to install pollution control equipment within the timeframe specified by the regulatory agencies. In certain instances, the applicant was reluctant to install the necessary control system because the technology had not been proven. Lawsuits regarding lack of compliance at other facilities owned by the U.S. Steel Corporation have no bearing on the review of this permit application.

Comment JW-4:

Economically, taxes and inflation will rise along with home construction.

Response JW-4:

Plant-related population increases and competition for limited housing will increase cost-of-living pressures. However, the only significant inflationary pressures are expected to be on housing prices. Residents who are not in the market for a new house would experience minimal effects.

In the Local Study Area (Conneaut and Springfield), total tax collections would have to be increased to support services for new area residents. However, the amount of taxes paid by individual citizens is expected to decrease as the property tax base expands through the addition of the Lakefront plant and new jobs expand the base for income tax collections.

Comment JW-5:

Too many questions have arisen about the adequacy of the Environmental Impact Statement; it appears to me that the report was performed as a routine gesture instead of a true environmental assessment.

Response JW-5:

The comment does not specify how and where the Environmental Impact Statement is inadequate. Therefore, it is difficult to provide anything more than a general response.

During the review of the Department of the Army permit application submitted by the U.S. Steel Corporation, we determined that the work proposed and related activities were of sufficient magnitude to have a significant impact on the human environment. In the view of these circumstances, we decided to prepare an Environmental Impact Statement in accordance with the requirements set forth in the National Environmental Policy Act of 1969 and pertinent guidelines developed by the Council on Environmental Quality.

The EIS process is intended to help public officials make decisions that are based on an understanding of environmental consequences and to encourage them to take those actions that are necessary to protect, restore, and enhance the environment. To insure that the EIS fully identified the primary and secondary impacts associated with the proposed action, we formed an interagency technical team consisting of Federal, State, and local regulatory agencies. Meetings of the team were held frequently to identify applicable standards and guidelines, specify sampling methods for baseline data, review and evaluate information submitted to the Corps by the U.S. Steel

Corporation and its various consultants, provide an opportunity for agency representatives to directly discuss their concerns with the applicant, and to modify the proposal where necessary to lessen or mitigate resource loss. Further, the efforts of the technical team were augmented by public input received at hearings, meetings, and workshop sessions.

In summary, considerable time and effort has been expended to develop an EIS that accurately and thoroughly portrays the environmental consequences associated with the construction and operation of a steel mill in Conneaut, OH. Therefore, we do not consider the act of preparing this EIS to be a routine gesture as suggested in your comment.

Comment KE-1:

Refer to CRG-5

Comment KE-2:

Refer to A-9

Comment KE-3:

Refer to AHC-3

Comment KE-4:

Refer to ADN-3

Comment KE-5:

Furthermore, I feel that at least for the social impact - this total alteration of the Conneaut-Metropolitan Erie area socially - the people living there should be at the very least polled as to their feeling on creating this new population center on the heels of the Lakefront plant, with its radical change in lifestyles for the area.

Response KE-5:

The Corps of Engineers is not authorized by law to poll public sentiment on the issue of construction and operation of the proposed steel mill. Such activities are the responsibility of State and local governmental officials or local service organizations depending on whether a referendum or a public opinion poll is chosen as the desired course of action.

Comment KEE-1:

Refer to COM-1

Comment KEE-2:

I am very much concerned with the problem of suspended solids created by construction of the mill. Consider that the site includes 2,760 acres of land, and that between ten and twenty tons of soil would be eroded from each acre per year while the mill was being built. This load of suspended solids would find its way into the lake and cause great damage to the insect life and fish larvae in this area.

Response KEE-2:

The applicant has agreed to develop the Erosion Control Plan required by the Commonwealth of Pennsylvania, and to apply that plan to all portions of the site, including those in Ohio. Given such controls, the potential magnitude of sediment loss is not expected to have significant adverse effects on aquatic biota in Lake Erie, including insects and larval fish. The degree to which this expectation is realized would largely depend on the requirements stipulated for implementation of the Erosion Control Plan.

Comment KEE-3:

Damage from silt would not be limited to the area off Conneaut Creek. For example, Elk Creek would receive a suspended solids load increased by 70 tons in 1981, 150 tons in 1985, and 250 tons in 1990. Crooked Creek would receive an additional 80 tons in 1981, 200 tons in 1985, and 450 tons in 1990 due to land use activities related to the steel mill. These annual increases are based on a population growth of 16,000 people. It has been estimated that the actual population increase would be closer to 45,500 to 58,500 people. I think it is clear that steel mill related growth would cause much greater damage to the lake and its tributaries than originally estimated. The loads of suspended solids entering these water sheds would limit the reproduction of fish and insect life; the blanket of silt created would smother everything it covered. To allow the destruction of these waters from the urbanization which will surely follow the construction of the steel mill would be criminal in nature. One section of

Conneaut Creek was once a wilderness area. The majority of land surrounding the proposed steel mill is rural, beautiful country. The land should be kept green and the streams kept clean. Steel mills should be kept where the people and the parking lots already exist.

Response KEE-3:

On a localized basis, the projected levels of baseline and/or impact-related growth could have adverse effects on lake or stream biota, especially the latter. This is not due to the magnitude of the projected growth since, on that basis, the impact potential appears slight. Rather the magnitude of impacts is related to the fact that almost any poorly-planned or poorly-executed development project can seriously disrupt local aquatic biota by construction and/or operations-related sedimentation. However, it is within the purview of the involved communities to adopt and enforce zoning and subdivision provisions, to be used alone or in conjunction with State regulatory imperatives (e.g., Erosion Control Plans in Pennsylvania) to prevent any excessive siltation due to individual developments.

Comment KEE-4:

Refer to A-7

Comment KEE-5:

Refer to CRG-21

Comment KEE-6:

Refer to A-9

Comment KEE-7:

Refer to EPA-88

Comment KEE-8:

I can recall that during one broadcast program concerning the steel mill the statement was made that the emissions from the plant would not create acid rainfall. Paragraph 4.763 on page 4-856 of Volume III of the draft contains the following: "Elevated levels of phenols, iron and lowered pH due to acid rains were observed in Turkey Creek under baseline conditions with one possible source being urban areas upwind." Furthermore, while average unpolluted rainfall has a pH value of about 5.6, rainfall in Erie County averages about 4.5. Cars equipped with catalytic convertors are a source of sulphuric acid mist and a suspected contributor to acid rainfall.

What will the addition of 50,000 rather than 16,000 new residents mean in terms of automobile produced pollutants? Another source of sulphur dioxide will be the Penelec built Coho Power Plant. According to the Erie Times, after the removal of 99.5% of particulates and 90% of the sulphur dioxide produced, the plant would emit 5,988 pounds of sulphur dioxide, 3,453 pounds of nitrous oxide and 434 pounds of particulates per hour. Advocates of the mill claim that sulphur dioxide emissions will not cause damage; ironically the higher the content of sulphur oxides in the air, the more difficult the production of acid rain becomes. Acid rainfall will not cause obvious damage to foilage until a pH value of about 3.0 is created. Must it rain vinegar before the rain in Erie County is considered acid? In an article entitled "The Sulfur We Breathe," by James W. Sawyer (Environment Magazine, vol. 20, March 1978, pp. 25-31), the statement is made that "even where sulfur dioxide levels are within Federal limits, sulfate salts and sulfuric mists may occur at dangerously high levels, particularly in the northeast where prevailing winds bring contaminated air from the Midwest." The article continues to state that even if local sulfur dioxide concentrations "fall off drastically, local sulfate concentrations stay high - alarmingly high as far as epidemiologists are concerned (p. 26)." I realize that steel mills are not as great a producer of sulfur dioxide as other industries, but I am convinced that the air pollutants from the Lakefront plant would be enough to cause health problems in this area. I am also convinced that Erie County now receives acid rain, the pH of which would be markedly lowered by emissions from the steel mill. I think that air pollution from the proposed steel mill would limit the expansion of established industries, damage crops and wildlife, and make Erie County a much less desirable place to live than it is presently.

Comment SAE-11:

(H). Your assessment of potential increases in acidic precipitation is of particular concern to me. We are just beginning a joint research project with Boyce Thompson Institute to determine the impact of acid precipitation on fruit crops. Your suggestion that a sulfate-induced pH drop of 0.3 is too small to affect sensitive crops (Sec. 4.659, p. 8-763) remains untested. A small pH drop at the lower pH levels could be enough to reach the threshold for acid injury to vegetation. In addition to sulfates, nitrates emitted from the Steel Mill and related secondary developments will also contribute to potential increases in acidity of rainfall.

Response KEE-8, SAE-11:

In discussing SO_x-induced changes in rainfall pH, the DEIS incorrectly stated that "the worst case increment for rainfall sulfate (0.3 mg/l) could cause a pH drop of

approximately 0.3" (refer to paragraph 4.659, page 4.763). This has been corrected to read "...a rainfall pH drop of approximately 0.03." As reported in Chapter Two of the EIS, the soils on the site range from a pH of 4.25 to 7.70. Even on the most acid of these soils, a rainfall pH change of 0.03 would be expected to cause a minimal change in soil pH. The background rainfall pH on the site has been measured to be in the range of 4.6-4.3 and has been estimated on the basis of data from other locations in the northeast to average around 4.15. Therefore, the "worst case" sulfate increment would not be expected to lower the rainfall pH to less than four.

Since there is no tested theoretical model for estimating changes in pH of rainfall as a result of pollution, no attempt is made in the EIS to quantify changes in rainfall pH associated with the plant and its anticipated secondary development. The EIS presents estimates of changes in sulfate content of rainfall downwind of the plant on the basis of three methods, each of which is referenced in Chapter Four of this final EIS: (1) a direct comparison by Hales, et al., with measurements of SO_4 washout at a Pennsylvania power plant, (2) an empirical model by Gatz which has not been tested for sulfate, the scavenging ratio model, (3) a theoretical model by Dana, et al., which has been verified for SO_2 and SO_4 washout via observations at two power plants, including the Pennsylvania power plant study referred to in (1).

Estimates of rainfall sulfate concentrations presented in the EIS were made by each of the above methods with no commentary as to which was the most suitable method. The purpose was to demonstrate to the technical reader that all available analysis techniques had been utilized in investigating this important question. Unfortunately, this presentation with five different sulfate increments calculated apparently has given rise to some confusion which should be clarified. Method (2), the scavenging ratio technique, which yielded the highest estimated SO_4 increments, has never been tested or verified for SO_4 washout. To apply this technique it was necessary to draw analogy to other particles of similar size. Method (1) relied on the assumption that the proposed U.S. Steel plant is similar to the Keystone power plant. Although neither facility is similar to the other, the technique did provide a mechanism for relating the applicant's estimates to observed sulfate impacts. This close tie to observations was designed to be convincing to those readers who are skeptical of theory.

Method (3) is a theoretical model which has been tested and verified at two sites in the United States. The theoretical nature allows one to explicitly account for the differences between the proposed plant and the Keystone plant. In this regard the technique is superior to Method (1). Therefore, greatest confidence should be placed in Method (3) by Dana, et al., somewhat lesser confidence in Method (1), and least confidence in the untested theory of Method (2).

Confusion may arise from the presentation of a single sulfate increment for typical conditions, and one for worst case. "Typical" and "worst case" refer to different storm events, i.e., different times. Of course, during a single storm the sulfate increment will be greatest, a distance of 10-50 km, directly downwind. The single number is the highest sulfate increment expected anywhere in the vicinity during that storm. All other locales will have lesser sulfate increments. The position of this maximum increment will be different for each storm, depending on wind speed and wind direction. Thus, a fixed point will always have a lower average sulfate increment than is indicated by the "typical" increment.

As indicated above, there is no tested theoretical model for estimating changes in pH of rainfall as a result of airborne pollution.

The proposed steel plant would emit SO_2 and NO_X both of which would be expected to lower rainfall pH, and fly ash particulates which would be expected to raise rainfall pH. The resultant change in pH is impossible to predict. The estimate of a drop of .2 pH units is presented in the EIS based on the assumption that the sulfate level in the rain is increased by 3 mg/l, while all other constituents remain unchanged. The sulfate increment used for this calculation is based on untested Method (2) in which there is very little confidence. Methods (1) and (3) both indicate worst case increments of 0.3 mg/l or less and typical increments of 0.2 mg/l or less. These increments would give rise to a pH change of less than .03 pH units. However, Corps staff is unable to predict the actual pH change since the effects of NO_X and particulates cannot be determined. In most studies of pH changes near power plants, pH changes correlate well with sulfate. This would indicate that sulfate has the dominant effect on pH for combustion sources. On the basis of the above considerations, it is safe to say that, at any one location, both the single storm and the average rainfall pH changes attributable to the proposed plant would be much less than .1 pH unit. The average rainfall pH change generally has a more significant long-term effect on the ecology of the lakes and streams than the single storm pH change. This average change would probably be insignificant and impossible to detect should the plant be built.

Comment LPT-1:

Refer to A-4

Comment LPT-2:

Refer to COM-9

Comment LPT-3:

Refer to DOC-1

Comment LPT-4:

Refer to DA-1

Comment LPT-5:

Lake Erie has a unique ecosystem that may permanently be spoiled by the pollution from the world's largest steel plant . . . that could be obsolete within 30 years. And so, considering the Hooneye, Trout, and Salmon populations, the fact that the area of the site is the last stronghold in Pennsylvania for large Woodcock and Snipe breeding populations, and the other interdependent terrestrial plant and animal populations, I must state my personal opposition to the proposed U.S. Steel mill and its environmental and socio-economic impact.

A less immediate but quite possible impact of locating the mill in Conneaut involves consideration of the effects of such a mill if a foreign power were to attack the United States: Erie would no longer be among the top 100 bomb targets - our area would then be among the top 10 or less!

Response LPT-5:

Various regulatory agencies periodically review projects to insure compliance with permitted actions. Should facilities become outdated and fall into noncompliance, repair, renovation, or shutdown could be required by the apropriate regulatory agency until such time that standards are achieved. The decision on whether or not to issue the Department of the Army (DA) permit will be based on the evaluation of a series of public interest factors which include conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs, safety, food production, and in general, the needs and welfare of the public. Regulations applicable to the proposed activity were promulgated for the explicit purpose of insuring the protection of these natural resources. Analysis of strategic bomb targets involves a review of national defense which is far beyond the scope of this DA permit action.

Comment LV-1:

In talking to people in the Springfield Township area, I find no one who uses that creek to catch fish because there are no fish in it.

Response LV-1:

Paragraph 2.259 of the DEIS reported that the Ohio Department of Natural Resources estimated 125 man-days are expended each year while fishing the 1.5-mile reach of Turkey Creek in Ohio. In regard to fish species present, Section 2.905 reported more than 40 species of fish collected from Turkey Creek between April and mid-August 1977. A summary of the fishery data collected at the Turkey Creek sample sites was presented in Tables 2-442 through 2-445.

Comment LV-2:

I would urge you to minimize the impact of the Turkey Creek effect on this Mill project and to proceed with the approval of it provided the channel established by U. S. Steel will adequately handle the runoff waters that are usually encountered in heavy rain seasons in the area specified.

Response LV-2:

As lead Federal agency for the preparation of the Final Environmental Impact Statement, the Corps of Engineers must fulfill the legal requirements of the National Environmental Policy Act of 1969 (NEPA). It is also required by regulation to coordinate with the appropriate Federal and State agencies and to provide an opportunity for public comment. The proposed alteration of Turkey Creek is a major issue which must be resolved before a Department of the Army permit can be issued.

Comment LV-1:

Whatever the issue, the League believes that there must be well defined channels for citizens' input and sufficient time for review.

Comment OSC-5:

Furthermore, the Sierra Club submits that the Corp of Engineers' proper response to these and other comments which they have received entails more than a simple report that the comments exist. The law requires that all comments obtained from the public and from other agencies be meaningfully employed in the preparation of the final statement. Not only does this call for the development and maintenance of a comment disposition record, but also for some interactive process of public meetings whereby the implications of technical comments, as they are generated by the experts in the various agencies of state and federal government, can be aired and examined, and utilized to develop an increased appreciation of the dimensions of the impacts the project would have.

The Sierra Club urges the Corps to utilize the assistance of its interagency teams of experts and, where necessary, to obtain the assistance of independent authorities to evaluate and consider the complex and substantial questions that are being raised regarding the proposed steel mill. The Sierra Club trusts that, through appropriate delegation of duties, the Corps will be able to respond to all comments which are relevant and reasonable, either by conducting the research necessary to provide satisfactory answers, or by supplying the page reference to those places in the Impact Statement which provide them. As stated by the Honorable Judge Boeks of the Federal District Court for the Western District of Washington:

"The proper response to comments which are both relevant and reasonable is to either conduct the research necessary to provide satisfactory answers, or to refer to those places in the Impact Statement which provide them. If the final Impact Statement

fails substantially to do so, it will not meet the statutory requirements." Daly v. Volpe, 350 F.Supp. 252, 265, 2 ELR 20443, 20547 (W.D. Wash. 1971).

Response LWV-1, OSC-5:

Corps of Engineers regulations and Council on Environmental Quality Guidelines require that we respond where appropriate to individual comments or groups of similar comments received during the review period for the draft EIS. In compliance with these regulations, a comment-response section has been incorporated into Chapter Nine of this final statement.

Further, to acquaint interested individuals with the broad spectrum of agency comments on the draft EIS, a public meeting was held on 16 October 1978. During this session, agency officials summarized their concerns regarding the proposed Lakefront plant and answered questions from the general public. At the conclusion of the EIS review period, a limited number of volumes containing all of the letters of comment on the EIS were distributed to local libraries, environmental groups, public interest organizations, interested individuals, and representatives of the Federal, State, and local agencies.

Throughout the processing of this Department of the Army permit application, we have utilized the expertise of the various Federal, State, and local agency representatives to resolve a variety of technical and environmental issues. In addition, consultants were also retained to evaluate the results of the impact analysis or improve upon the existing data base. A complete list of the technical consultants participating in this evaluation can be found in Chapter One of this statement.

The reviewer must realize that there are many issues that can only be treated in general terms due to the lack of precise engineering design data. However, all of these issues will be dealt with at a later date during the processing of other required Federal, State, and local regulatory permit applications.

Comment LWV-2:

Refer to A-4

Comment MAE-1:

As we stated in our preliminary comment to the Corps on August 22, 1978, the overall analysis reveals that the steel mill would magnify an already critical shortage of skilled and semi-skilled workers in Erie and Crawford counties as well as create additional pressures on wage rates. Battelle's analysis of the D.E.I.S. data estimates that roughly one-third of the proposed mill's skilled and semi-skilled workers will come from the primary impact area of Ashtabula, Crawford and Erie counties. Based on this estimate, Battelle projects 2,364 of these workers will come from the Erie area. The effect of an additional demand of 2,364 skilled and semi-skilled workers, in the face of an already identified short and long range skilled worker shortage, could critically handicap manufacturing operations of existing industry.

Response MAE-1:

Employment needs for skilled maintenance workers in Step I are expected to be less than 1,000 and less than 600 in Step II. The applicant recognizes the shortage of skilled maintenance workers throughout the country and is prepared to provide special concentrated training to upgrade the qualifications of semi-skilled individuals in order to satisfy part of the need for skilled maintenance workers. This action will be taken to minimize the impact of the proposed plant on skilled maintenance workers employed in the local area. The greatest requirements will be for the following trade areas: motor inspector, millwrights, welders, machinists, electricians, and mobil equipment repairman.

Employment needs for skilled operators (individuals who will operate the production facilities) in both Steps I and II are minimal for the applicant plans to employ unskilled workers and train them to fill the particular job requirements.

Employment needs for semi-skilled operators and semi-skilled maintenance positions can be met by hiring individuals with limited skills and providing them with extensive training required prior to the mill start-up in both Steps I and II. As such, it is not the intention to recruit semi-skilled workers for this need in the local labor market.

Comment MAE-2:

Refer to JB-7

Comment MAE-3:

Refer to A-4

Comment MAE-4:

In addition, it is important to existing industries in the development of coping strategies to obtain from U.S. Steel a detailed occupational analysis of the proposed mill at the earliest date in order to verify the data constructed in-house by Battelle.

Response MAE-4:

The applicant has not prepared the job descriptions for positions at the Lakefront facility. This information would not be developed until such time as a realistic date for plant start-up is established.

Comment MAE-5:

Refer to EPH-146

Comment MAE-6:

Refer to ADN-1

Comment MM-1:

Refer to DK-6

Comment MM-2:

Another area of concern is that of thermal impact on Lake Erie waters. As you can very easily see from the black and white pictures, Presque Isle is protected during the winter months from erosion due to ice formation. The EIS says that the wastewater effluent would increase water temperature anywhere from 6 to 19°C, 4-639. As stated in 4-642, initial freeze-up would be delayed. With the severe storms we experience during the winter this could have a very profound effect on erosion. As you can tell from pictures of Budny beach, much has been done to help slow down erosion by means of breakwaters and land fills. However, these are not very permanent solutions to our problem and the steel plant would only create more erosion problems.

Comment RB-4:

An increase of 19° over the average winter water temperature will result in a marked drop in ice formation on the lake itself as well as the formation of ice dunes along the lake shore. This projected increase in temperature does not take into account the additional heat to be discharged from the proposed Echo power station nor does it consider the impact of additional development which will result from construction of the mill.

Response MM-2, RB-4:

The effluent temperature is projected to be 6-19°C warmer than ambient (0.6°C). However, this temperature is rapidly dissipated near the submerged outfall such that ambient surface temperatures would not be more than 1.5°C. This slight increase in temperature, and the high velocity of the discharge may lead to reductions in ice cover within 150-250 m of the outfall. Since the outfall is more than 1,500 m from the shore, no effect on near shore ice cover or erosion is expected.

Comment MM-3:

Refer to CRG-24

Comment MM-4:

Refer to A-10

Comment MM-5:

Refer to DK-2

Comment NAS-1:

In reviewing the statement, we paid close attention to future changes in air quality and water quality that would be due to the construction and completion of this project. It is to be noted that the EIS went into great detail as to the type and extent of air emissions and effluent discharges. However, the EIS does not really deal with the cumulative effects of these emissions and discharges. For example, to what extent will the water quality of Lake Erie change due to the combined impact of the organic chemicals, suspended solids, and increased temperatures, and what are the implications for aquatic life?

Comment PFC-22:

Page 4-589 (4.502) to 4-634 (4.542). The use of "averages" mean little to living organisms who live or die according to maximums or minimums within a relatively short period of time. Or what about long-term effects--one year or more--of these pollutants on some stage of the life cycle of the aquatic organisms, such as reproduction, egg survival, etc.? Each pollutant has an EPA maximum concentration, but what about the thousands of possible combinations of these individual elements or compounds?

Comment PHCOE-22:

"...you're putting these pollutants into the lake, the phenol -- we heard the phenol, the ammonia -- we'll just call them A, B, C, and D. But what I find lacking as I read, you put A, B, C, and D, but I don't find what happens when you -- you know, when A plus B get together. Nor do I find out what happens when the fish absorb these materials put into the water, and the metabolism re-grinds them, so to speak, and put them out..."

Response NAS-1, PFC-22, PHCOE-22:

The draft EIS did address the potential effects of combined contaminants on aquatic biota to the extent possible through utilization of current scientific knowledge on the subject. It would be difficult (perhaps not possible) to create an accurate set of test conditions prior to plant operations that would provide all the necessary data on the effects of the exact mixture of ambient water, treated wastewater, and receptor organisms that would exist during plant operations. To proceed beyond the level of analysis provided in the draft EIS and advance the present state-of-the-art, would involve the inclusion of investigations such as bioassay testing for determination of combined contaminant effects for which studies are not presently available. However, that effort would be defined by the Ohio EPA, with participation by the USEPA and the Pennsylvania DER, in the issuance of the project's NPDES permit.

The primary control technology used at the proposed plant would be derived from the data collected on toxicity and bioaccumulation at two other U.S. Steel Corporation mills. In addition, the applicant has also collected some baseline data on toxic residues in fish and expects to perform additional monitoring as the facility is completed and phased into operation. Other studies would probably be conducted by the USEPA and the States of Pennsylvania and Ohio to determine whether instances of bioaccumulation can be correlated with plant operations.

Life-cycle and metabolic considerations were not ignored in the discussion of impacts presented in the draft EIS. Such considerations were part of many of the contaminant bioassay systems whose results were used in arriving at the judgments and effects thresholds discussed in the draft EIS. Staff believes that this is fully reflected in the text of paragraphs 4.713 through 4.757.

The applicant has stated on several occasions that no synergistic effects have been noted at locations of existing, well-controlled steel plants where levels of contaminants exceed those contemplated for the Lakefront facility.

However, Corps staff believes that the state-of-the-art on synergistic effects is still too rudimentary to support the applicant's conclusions.

Comment NAS-2:

Refer to DA-1

Comment NAS-3

Refer to CCM-1

Comment NPR-1:

The health component of the EIS is very conservative preferring to advocate the continuation of the present traditional mode of health care as opposed to the consideration of new ideas which could improve the delivery of medical services in view of the increased projected populations. Such concepts as emergency medical systems, group practices, HMO's, levels of hospital care, referral patterns, and home health care are not discussed.

Comment NPR-3:

The study states that Brown Memorial Hospital (BMH) and Ashtabula Hospital (AH) should be the focus for primary care services in Ashtabula County. HSI believes that such community hospitals should be the focus for a secondary level of care. Primary care should be encouraged through development and expansion of primary care centers, physician group practices, and the consideration of an HMO supported by U.S. Steel Corporation. The tertiary level of care then should have been addressed and identified through such developed facilities as St. Vincent Health Center and Hamot Medical Center in Erie which are in close geographic location to the principal study area and which already services a percentage of population from the Springfield, Pennsylvania, and Conneaut-Ashtabula, Ohio areas.

Comment NPR-10:

The overall occupancy rates of Brown Memorial Hospital (BMH) (73.1 percent) and Ashtabula Hospital (AH) (60.1 percent) does not suggest a need for bed expansion and construction programs based on a maximum ten (10) year Ohio population expansion 2,220 (60 percent x 15,800) people plus normal baseline projections especially when the final location of residence and the preferred referral and usage patterns for medical care are not known. Again, the consultants were conservative by recommending the traditional mode of construction instead of advancing new modes of health care and management which will better utilize current physical plants.

Comment NPR-18:

The health component of the EIS is basically a conservative and traditional evaluation of the impact of and need for medical care in the principal study area. Health planning concepts and guidelines such as beds per 1,000 population, levels of medical care, group practices, primary care centers, and HMO development are omitted.

Response NPR-1, NPR-3, NPR-10, NPR-18:

The above comments generally indicate that the DEIS had not explored or recommended improved means of delivering health care. The health care section was developed for the primary purpose of examining the incremental impacts of the new resident population on the health care delivery system which would exist in the Regional Study Area under baseline conditions. There was no intention in this analysis to present a consideration of structural changes or new concepts in health care, since it would be more appropriate to examine these issues in a comprehensive health system planning study. Since the plant-related population increase for the region is expected to be about three percent, there would be no apparent need for changes in the traditional methods of providing health care. Should structural changes occur under baseline conditions, there might be changes in the specific types of facilities or services required, but there would be no change in the magnitude of impact. If a comprehensive health planning study were to recommend new types of primary care services (e.g., HMOs), an effort could be made to encourage their development as new facilities and personnel are needed in the area.

Similarly, the study does not state that Brown Memorial Hospital and Ashtabula Hospital should be the focus for primary health care in Ashtabula County, but rather that they are presently the focus of most of the primary care delivery. This environmental statement does not attempt to assess the adequacy of the existing health care system, but rather describes the impacts of the new resident population upon it.

Comment NPR-2:

Refer to ADM-3

Comment NPR-3:

Refer to NPR-1

Comment NPR-4:

Refer to ADM-3

Comment NPR-5:

Refer to ADM-3

Comment NPR-6:

In terms of future residences, these people may be more attracted to the large urban areas due to the presence of large shopping centers, recreational sports, and culture facilities.

Comment NPR-17:

The new residents, in form of skilled laborers, may gravitate more to Erie area for services and residences because of a possible preference for urban conditions based on pre-formed habits if a concerted effort is made by Pennsylvania State and county governments and private enterprise to provide additional housing units.

Response NPR-6, NPR-17:

The applicant's population projections and the methodology used in obtaining these figures are contained in Working Papers II and III which were appended to the draft EIS. The factors listed in the above comments were used in the applicant's evaluation. However, the reviewer is cautioned that other population projections exist that reasonably predict an increase of 11,000 to 58,500 new residents and various distributions of these in-migrants (refer to Chapter Four).

Comment NPR-7:

The EIS states that the new population would be divided 75 percent-25 percent between the two (2) Ohio hospital facilities. HSI does not believe this to be a correct statement.

Patient origin data is not readily available, but provisional information indicates that approximately 2.2 percent of St. Vincent's Health Center admissions are Ohio residents (presumably, mostly Conneaut-Ashtabula area); 2.5 percent of Hamot Medical Center; and about one percent of Doctors' Osteopathic Hospital. If computed for the year 1977, this would equal 1,030 patients or about 23 Erie County beds utilized at 100 percent occupancy or 27 beds at the Federally recommended level of 80 percent occupancy. Therefore, it is estimated that about 7.5 percent of the Ohio patients in the principal study area are admitted to Erie hospitals and therefore, not 100 percent of the new population will likely utilize only the Ohio facilities. This is based on past utilization patterns as we stated before based on a premise that the incoming skilled labor may gravitate more to urban health facilities for care.

Comment NPR-15:

HSI believes that there will be a larger impact on the Pennsylvania side of the plant development, particularly in terms of Erie area health facilities than the EIS projects.

Response NPR-7, NPR-15:

The small percentage of Ohio residents admitted to Erie hospitals, as well as the small number of Pennsylvania residents admitted to Brown Memorial Hospital, has already been noted in the health care baseline section of Chapter Two. Nevertheless, the allocation of new population in Conneaut between the two Ohio hospitals would account for the vast majority of health care services for those residents. As correctly noted, 1,030 patients from Ohio admitted to Erie hospitals amounts to about 1.5 percent of the population of the Ohio Principal Study Area. If this relationship were to hold true for new population, this would increase the patient load for Erie hospitals by about 150 people in 1990, which would not have a significant impact on the Erie health care system.

Comment NPR-8:

While we are saying that the impact of numbers of people for health services in Erie could be greater than the EIS estimates, our basic conclusion also is that the Erie facilities can handle this increase without the need for physical expansion at least through 1990. Erie County is overbedded for Acute Care, including a surplus of 83 Medical-Surgical, 17 Pediatrics, and 25 OB/GYN for a total of 125 surplus acute care beds.

Based on recent State of Pennsylvania projections, Erie had a ratio of 5.73 beds/1,000 population in 1975 and will have ratios of 6.14 in 1980, 5.97 in 1985, and 5.85 in 1990 unless HSI can impact more heavily on bed reduction programs and joint hospital planning. These ratios are well above the Federal mandate of 4.0 beds/1,000 population.

If the total new population by 1990 for Erie County reaches only the lowest projected levels according to A.D. Little Co., i.e., 19,400 (normal baseline projections) plus 6,320 (40 percent of 15,800) for a total of 25,720, this would generate the usage of approximately 101 acute care beds based on the average recommended usage rate of four beds/1,000 population. These 101 beds are well within the current surplus of 125 beds. If the maximum projected population is reached according to State projections, i.e., 19,400 (normal baseline projections) plus 14,800 (40 percent of 37,000) for a total of 34,200, then this would generate a usage of 136 beds which is still in close proximity to the number of surplus beds. This difference of only 11 beds will be offset by increased emphasis on utilization review and outpatient services and by the fact that this new population being younger in age will, in fact, probably not need beds at the rate of four per 1,000.

Comment NPR-21:

The current long-term care bed need projections for Erie County will not be affected by the construction of the steel mill.

Response NPR-8, NPR-21:

No response required.

Comment NPR-9:

A.D. Little Co. projects bed increases and hospital construction for the two (2) Ohio facilities based on a bed ratio of 4.7 beds/1,000 population which is the current ratio in the study area. It is unrealistic to project bed need based on this ratio again because of the Federal regulations requiring a health planning goal of four beds/1,000 population which means health facilities must provide better utilization and/or provide alternative methods to in-patient care.

It is also unrealistic because the incoming population will be younger in age requiring much less hospitalization than if the new influx were elderly.

Response NPR-9:

HEW Health Resources Administration Guidelines recommend that a level of 4.0 beds per 1,000 population not be exceeded. However, this level of service refers to an area's bed ratio for total population, not just new population. Ashtabula County currently has about 3.6 hospital beds per 1,000 population. Therefore, even....Adding beds at a rate of 4.7 per 1,000, the total ratio would only increase 3.8 beds per 1,000 population by 1990. This is well within the planning guidelines of no more than 4.0 beds per 1,000, and will help to improve the availability of in-patient beds for existing and new county residents.

Comment NPR-10:

Refer to NPR-1

Comment NPR-11:

Current studies and projections of LTC bed needs in Erie County indicate that additional beds may still be needed to meet present service demands through 1983. There are 1,631 skilled nursing and intensive care beds available in the county with 115 new beds approved for construction. Approximately 272 more beds may be needed by 1983.

Since the majority of new residents are not expected to be elderly, the current LTC bed assessment is presumed to be sufficient, at least for the next five (5) years.

Comment NPR-12:

HSI agrees that most health manpower in this area is not in ample supply. Physicians generally are plentiful if one considers Erie County as a whole with a physician population ratio of 1:831. However, 85 percent of the 326 Erie County physicians practice in the city of Erie and 90.1 percent practice in the greater Erie metropolitan area leaving a 9.9 percent in rural Erie County. Thus, the problem is one of physician maldistribution as it is in most of the U.S. Primary Care physicians, both M.D.'s and D.O.'s, currently number about 148 with a ratio of 1:1918 most of whom practice in the greater Erie area. The recommended norm is 1:2000 which Erie County, as a whole, has achieved. The two major allopathic hospitals in Erie have instituted family practice residency programs. Hamot Medical Center has 18 positions with the first class graduating in 1977. Saint Vincent Health Center has 14 positions and will begin graduating M.D.'s in 1979. By the early 1980's, at least 10 to 12 primary care physicians per year will be completing these programs. Based on a national average of 50 percent retention rate in the general location of the residing programs, five and six new primary care physicians should be available in Erie County each year. Assuming that the maximum population growth of 34,000 people occurs in Erie County by 1990, then an additional 17 primary care physicians are required to maintain the current ratio of physicians to population at 1:2000. This goal is then reachable in the mid 1980's, assuming that the attrition rate of present primary care physicians is low. Recruitment activities which are also ongoing could accelerate this timetable. Additionally, Doctors and Erie Osteopathic Hospitals have yearly interns and residents, many of whom remain in the area. Gannon College also has a six (6) year physician program in conjunction with Hannamann Medical School which emphasizes the enrollment and retention of area students.

In conclusion, the primary care physician shortage has a reasonable chance to be solved in Erie County. However, this influx and retention of new physicians may not guarantee that these individuals will reside and practice in rural Erie County. Proper orientation of residents in the various hospitals and medical programs to the needs of rural Americans would be a positive factor. Economic inducement may also be present because there will be new concentration of population in the outlying areas whose incomes will probably be above those of current residents and who will probably be well-insured through various third-party reimbursers. The successful encouragement of the development of larger group practices in the outlying areas such as the Asper Medical Clinic will go a long way toward solving this problem.

The number of full-time practicing dentists in Erie County in 1977 was 144 for a dentist to population ratio of 1:1887. National surveys indicate that the mean number of patients served per dentist was 1,485. In any population, it is expected that 40 percent of people will seek periodic care for completion of dental problems requiring a dentist to population of 1:1000 and that 30 percent will seek some care (emergencies) requiring a ratio of 1:5000 and 30 percent virtually no care at all requiring a ratio of 1:6000. The overall Erie ratio of dentists to population is not adequate if we are to consider the figure of 1,485 to a guideline and means that the present dental force cannot handle an increase in population. Dentists are a little better distributed in the county than physicians, although 79.2 percent still practice in the greater Erie area. The increase in population in the county due to normal growth and the new plant will create a further need for additional dentists. Most of these new residents, it is suspected, will have the economic means to seek dental care. Using the suggested ratios mentioned above with a maximum population increase of 34,000 people would require approximately 23 new dentists to be located throughout Erie County. This then represents an area of concern on which HSI and the community must focus its attention.

Comment NPR-16:

Erie health facilities and services generally will be able to handle the new medical demands without need for capital expenditure.

Comment NPR-22:

The number of new dentists needed for the maximum population increases by 1990 will be at least 23 for Erie County and represents a major area of concern for HSI.

Response NPR-11, NPR-12, NPR-16, NPR-22:

Comment NPR-11 provides supplemental information on long-term and health manpower service requirements. We acknowledge these data, but note that its incorporation into the baseline would not affect the conclusions on plant-related impact. The information in Comment NPR-22 is also noted. However, only three dentists would be needed in Erie County to serve the plant-related increase in population, which is a relatively low number compared to projected baseline requirements.

Comment NPR-13:

The EIS does not address the question of the possible negative impact on the health of the current residents in the principal impact area. Since the income levels for the plant-related residents should be significantly higher than the current residents, how will this affect the economics of people on a low or fixed income in terms of their ability to purchase or to access necessary medical care.

Response NPR-13:

Estimation of the effect higher wages would have on medical care in the study area would be difficult due to the number of variables involved. One possibility is that plant workers would be able to pay higher medical costs because of higher income levels and the availability of comprehensive health care services, particularly if the supply of facilities and personnel is limited. This could have an adverse impact on residents with fixed or low incomes who were not fully covered by some type of health insurance. On the other hand, it can also be possible that the increased ability of some residents to pay would attract more medical services and personnel to the area than might otherwise occur, increasing the quality and availability of health care

services for all residents. In either case, the impact would be quite small, since the high income plant jobs would amount to only a four percent increase over baseline employment by 1990.

Comment NPR-14:

Another issue not addressed in the E.I.S. is the concept of Emergency Medical Services and the plan, if any, to establish a system of quick access to emergency personnel and services. A plant of this magnitude will, of course, mean a tremendous amount of both road and rail traffic. Will the design of the plant consider roadways and oil residential areas which are unobstructed by rail lines to prevent delays in the dispatch of emergency vehicles? Will a safe traffic pattern be designed which will keep heavy traffic away from residential areas to reduce accidents and injuries? Will a coordinated EMS system be developed between authorities in both states for mutual responses and assistance without regard for state boundaries?

Response NPR-14:

The policy of the U.S. Department of Health, Education and Welfare is to encourage joint coordination of Emergency Medical Service (EMS) systems. EMS planning grants from section 1203 (1) funds, awarded by HEW, may be used for this purpose.

Final decisions about whether to coordinate EMS systems must be made by local officials. The Federal Government urges local officials in both States to coordinate EMS delivery in the three-county impact area.

Traffic patterns would be established by local planners and the appropriate Federal and State transportation departments.

Comment NPR-15:

Relate to NPR-7

Comment NPR-16:

Relate to NPR-11

Comment NPR-17:

Relate to NPR-6

Comment NPR-18:

Relate to NPR-1

Comment NPR-19:

One hundred percent of the new population will not be divided solely between Brown Memorial Hospital and Ashtabula Hospital as stated since Erie facilities already service seven percent or more of current residents.

Response NPR-19:

We concur. However, the assumption that new residents in Ohio would be served solely by the two hospitals accounts for the vast majority of impacts. The effect of the increase in plant-related residents on the Erie hospitals would not be significant.

Comment NPR-20:

The projected need for 17 additional primary care physicians for Erie County by 1990 can be expected to be achieved by the mid to late 1980's.

Response NPR-20:

The comment is noted and no further response is required.

Comment NPR-21:

Refer to NPR-8

Comment NPR-22:

Refer to NPR-11

Comment NPR-23:

Refer to CRG-43

Comment NPR-24:

Environmental planning in terms of community safety and welfare and emergency medical services is not discussed.

Response NPR-24:

Emergency medical services in the study area are currently provided by fire department paramedics, hospital staff emergency squads, and hospital emergency rooms. The increase in population expected for the area would not be large enough to require changes in the system currently providing these services to the community. Further, the plant would provide its own first-aid type medical building, fully-equipped medical vehicle to handle onsite emergencies, and an appropriate staff of medical personnel.

In any case, the plant-related impact upon these services is relatively insignificant when compared to protected increases in the baseline. The development of such plans are considered to be beyond the scope of this analysis and therefore should be assessed by the appropriate governmental agencies not the applicant.

Comment NPR-25:

I think it is a gross error to write off impacts on long-term/geriatric/nursing facilities on the grounds that the incoming force is of working age. These people have parents and responsibilities which come with them. In this day increasingly we bring our elderly relatives to elderly housing or nursing homes near us, I think - i.e., they must come to our source of income, we cannot go "home" again. Further in some predictable proportion to the population, they will bring with them retarded, crippled, alcoholic, and mentally ill family members because such collateral responsibilities cannot be left behind. To assume that each mill employee will bring 2.6 healthy family members is to be blindly unrealistic.

Response NPR-25:

There is a possibility that some in-migrant workers might bring family members requiring nursing home care with them, although this would not cause any significant impact on the nursing home facilities in the study area. As shown in Table 2-149, there would be a substantial increase in the number of nursing home beds per 1,000 population over 65 by 1990, particularly in Erie County. If these Erie County beds were used at the 1975 ratio of 68/1,000, there would be a surplus of some 500 beds in 1990. This would be more than sufficient to accommodate any in-migrant family members requiring long-term care.

Comment NPR-26:

Page VI, Paragraph 10-(Springfield Township)

Upon completion of the U.S. Steel construction operation, the corporation will employ over 1,300 employees. This increased population can be expected to directly relate to additional population increases and additional employment. It is also probable that commercial establishments along Route 20 could double over the present commercial activity. Taking these two additional factors into consideration, the present population of Springfield Township could more than double by 1990.

Response NPR-26:

Corps staff is unable to determine how the reviewer derived the number 1,300. As discussed in the EIS, commercial development in Springfield is expected to be limited because of the proximity of larger commercial centers such as Conneaut, Millcreek, and Erie and also because of the lack of larger amounts of land zoned for commercial use. Even so, the applicant believes that the total population of Springfield Township and East Springfield Borough (baseline plus impact) would be approximately 6,830 by 1,900 or approximately twice the current population. This projection excludes the potential growth-limiting effects of new zoning ordinances.

Comment NPR-27:

Page 2-283 (2.213) Our records indicate that Girard Borough provides 24-hour police service.

Comment NPR-29:

Page 2-292 (2.221) Our records indicate that the Erie Police Department also has a mobile crime van, 14 motorcycles, a dog law enforcement van, a prisoner van, and that Millcreek Police Department has two motorcycles, a dog enforcement truck, and a tactical van.

Comment NPR-32:

McKean Borough does not provide broad-based law enforcement services. The law enforcement services provided by McKean Borough are limited to issuing moving traffic violation citations and parking citations.

Comment NPR-38:

Page 2-300 (2.335) Girard Borough police expenditures seem to be underestimated.

Response NPR-27, NPR-29, NPR-32, NPR-38:

The statement has been revised to include the information contained in Comments NPR-27 and NPR-29. Further, the Corps staff also acknowledges the fact that McKean Borough does not provide broadbased law enforcement services.

Documentation supporting the statement in Comment NPR-38 that Girard police expenditures appear to be underestimated was not provided. Even if the estimates were found to be different than those reported, it is unlikely that any changes in the plant-induced law enforcement impact analysis would result.

Comment NPR-28:

Page 2-290 (2.219) We have no record of Pennsylvania State Police equipment.

Comment NPR-30:

Page 2-294 (2.225) Our office does not maintain budget information on municipalities.

Response NPR-28, NPR-30:

The comments that Northwest Pennsylvania Regional Planning and Development Commission does not maintain records of Pennsylvania State Police equipment or of municipal budgets is noted.

Comment NPR-29:

Refer to NPR-27

Comment NPR-30:

Refer to NPR-28

Comment NPR-31:

Page 2-295 (2.228) Citizen's band radio communications is definitely not a preferred method of radio communications among police personnel. Utilizing citizen bands in the Springfield area would virtually isolate such local police from area law enforcement agencies, as they would be on police frequencies.

Response NPR-31:

The comment that citizen's band radio communication is not a preferred method of radio communication by polic personnel is noted. Citizen's band radio is mentioned as one example of systems currentiy in use.

Comment NPR-32:

Refer to NPR-27

Comment NPR-33:

The feasibility of contracting for police services is generally dependent upon the availability of full-time police protection by an adjacent community. Staff experience in this area indicates that extensive study of the respective crime rates, local financial resources, and government support is necessary.

Response NPR-33:

No response required.

Comment NPR-34:

All police officers are required to attend the 480-hour Basic Municipal Police Course. This law was passed in 1974, and was a long overdue effort to professionalize law

enforcement in Pennsyvania. Although part-time departments are recognized as law enforcement service providers and bound by this law, such departments provide limited services and generally pay their officers less requiring them to hold another full-time job. This restricts the officers' availability during off-duty hours and severely limits their availability to attend necessary in-service training courses. In addition, part-time departments are not eligible for funding assistance through the Governor's Justice Commission.

Comment NPR-39:

Page 5-5 (5.12) Our position on part-time personnel has already been stated, but we would emphasize that a municipality hiring part-time officers must still meet the current police training standards.

Response NPR-34, NPR-39:

The comments on Pennsylvania's requirement that all police officers (full-time and part-time) attend the Basic Municipal Police Course and on the limitations of part-time police departments are noted.

Comment NPR-35:

The hours that the plant will be operating during construction and upon completion as well as the number of employees during such times would need to be taken into consideration, in addition to the ratio of police personnel to the general population.

Response NPR-35:

These factors were taken into consideration, utilizing past experience at other steel manufacturing facilities and the general scheduling information provided by the applicant.

Comment NPR-36:

Refer to CRG-18

Comment NPR-37:

Page 2-298 (2.233) The $35,000 figure for two (2) officers may be low as salary and benefits for these officers could be $13,000-$16,000 apiece, at least $6,500 for a fully equipped marked vehicle, plus portable and mobile radio communications equipment, and a certain charge for radio dispatch services.

Response NPR-37:

The $35,000 figure represents operating costs (salaries, vehicle maintenance, and similar items). Capital expenditures (for vehicles and communications equipment) are not included in this estimated budget. Estimation of a value for total operating and capital expenditures combined would be difficult since capital costs in any given year are affected by such variables as the timing of individual investments and amortization schedules.

Comment NPR-38:

Refer to NPR-27

Comment NPR-39:

Refer to NPR-34

Comment NMP-1:

The remaining job openings, 6,490 would be filled by "original residents" but -- aside from being residents of the area -- where do these "original residents" come from? They are added to the baseline labor force, but there is no apparent explanation of how they can be so added without also affecting the baseline population. The labor force might be increased without a change in total population if the rates of participation of population in the labor force were also increased, but the Impact Statement makes no mention of changes in those ratios. They may be presently residents of the area who under baseline economic projections might be required to move elsewhere to seek employment if the U.S. Steel Plant were not available as a source of employment. Or they might be natives who have already immigrated but return once employment opportunities are made available by the U.S. Steel Project. In either of those later cases they would constitute a growth factor that for projection purposes would provide the same growth impact as if they were in-migrants and not "original residents."

Response NWP-1:

Original residents are defined as those workers living in the Principal Study Area prior to plant construction or those people who would live in the study area under the baseline scenario.

Working Paper III (which was appended to the draft EIS), describes sources of information on the use of local labor at new industrial plants and cites the assumptions used in the impact analysis. The increase in the original resident labor force is expected to result from increased male and female participation rates. Given the manufacturing orientation of the economics of Erie and Ashtabula counties, the proposed Lakefront plant could increase male participation rates in the Regional Study Area one percentage point over baseline estimates. Similarly, female participation rates are expected to increase by one percentage point because of the increase in job opportunities. However, recent trends suggest that even this estimate of female labor force participation may be low.

Comment NWP-2:

It cannot be inferred from the statistical presentation that "original residents" refers to a man presently employed in another job who will leave that job to take employment at the U.S. Steel facility. If this were intended, the size of the labor force would not increase correspondingly to the increase in the number of "original residents," and the baseline projection for employment would be decreased. Some employees may indeed come from other jobs within the Region. This would not diminish the actual impact, however, since the job opportunity would remain at the company the worker departed. The hiring of someone for that job would result in the same growth impact as if an in-migrant had been hired by U.S. Steel directly. The prospect for such employment should indeed fuel the hopes of those attracted to the area for job opportunities.

Response NWP-2:

Original residents are defined as people who would live in the study area under the baseline scenario, whether or not they were employed or even in the labor force.

Estimates of employment and in-migration were derived by balancing total new jobs at the proposed plant and secondary activities with total new workers (both in-migrants and original residents). The original resident share of new workers would include both new entrants to the labor force (resulting from increased male and female participation rates) and the previously unemployed. In addition, there is a possibility that persons currently employed in the Regional Area would leave their present job to take a higher-paying job at the Lakefront plant. However, the new labor force entrants, and the spouses and older children of primary in-migrants, would be available to fill those jobs. Thus, estimates of original resident and immigrant employment would not be affected by whether other original residents employed at the plant were "new" or "old" workers.

Comment NWP-3:

To avoid confusion some clarification should be made between the terms "original residents" and "mover." In assessing secondary impact, we are truly most concerned with the increase in the number of people who will be living in the area if the Plant is built over the number who would live in the area if it were not. To more accurately anticipate this, we should be concerned with the number of additional job opportunities related to the Plant, estimate the family size of these additional employed persons, and thereby arrive at the size and composition of population growth related to the Plant. Neither a reduction in unemployment rates nor absorption of presently unemployed persons is expected to enter into the equation, since not all new persons attracted to the area will be fully employed.

Response NWP-3:

Most secondary impacts are directly related to the increase in the number of people who would be living in the area if the plant is built. However, contrary to the above, available evidence (discussed in Working Paper III which was appended to the draft EIS) suggests that both lower unemployment rates and higher labor force participation rates are reasonable expectations. To the extent that there is underemployment in the area, it is likely to be absorbed by experienced workers moving up to better paying jobs, opening their present positions for new entrants to the labor force. Moreover, assuming that each new job produces a new family ignores the possibility of two-income families, which accounts for half of all U.S. families.

Comment NWP-4:

The low projection of migration is fortuitous with respect to minimizing secondary impacts from the proposed mill. Convenient though that may be, it does not truly seem to be a reasonable scenario. A project of this magnitude -- a Steel Mill of national significance requiring a peak of 10,000 workers to construct at a cost of over $3 billion and with operational employment in excess of 8,000 workers --will act as a growth magnet for those in need of employment. Almost every other major construction project in the United States in the last ten years -- many of them smaller in magnitude than that proposed here -- has drawn people seeking a fresh start in a prospering area. They come whether or not they have the skills that are needed, whether or not specific jobs are offered, and -- sometimes -- whether or not they are in fact employable. They come even when extensive eforts are made -- as in Alaska -- to discourage them.

Response NWP-4:

There is likely to be a significant difference between the number of people who would like a "fresh start" in the study area and the number of people who actually move in. The Alaska case is particularly interesting in this context because it represents a situation in which many of the expected impacts did not occur.

A recent "social impact assessment of the effect of the oil pipeline in Fairbanks* suggests that while the campaign to discourage people without promised jobs from coming to Alaska may not have reduced the influx of people, it probably influenced the type of people who came. Both the State of Alaska and Alaskan Pipeline Service Company engaged in a national news media campaign to discourage people from coming to Alaska, unless they were tourists or jobs had been assured to them. Therefore, according to Dixon, "Most of the people who came to Fairbanks knew what to expect, in general, and came prepared. Few people sold all their possessions, packed up their families, and moved to Alaska 'lock-stock-and-barrel' under the false assumption that they could get pipeline jobs." Some people came with round-trip tickets, viewing their trip to Alaska as a vacation during which they would explore employment opportunities. Others who believed they had skills which would guarantee them a job still came with enough resources to support themselves until they found work.

Much of this information supports the common sense conclusion that people would not move their families and possessions to the study area unless they have some assurance that they would be employed. While hundreds or thousands of people may send letters, visit, form lines at employment offices, such expressions of interest cannot be translated into population impacts.

Comment MMP-5:

Within the past year the metropolitan areas of Youngstown, Ohio, Johnstown, Pennsylvania and Buffalo, New York have all suffered economic reversals and decline in employment in the Steel industry. It is a virtual certainty that out-migration from these areas will increase significantly, and that many of the movers will be experienced steelworkers. And it seems unavoidable that many of these workers would be attracted to the impact area whether or not they were promised jobs.

Comment RM-7:

It is often implied that should this plant be built, it would ease the unemployment problem in this area. What is overlooked is the greater likelihood that most of the people employed in the construction and operation of the plant will come from outside the area. Coming into this area will be many people in search of jobs who do not get them and many people who got jobs but did not keep them. Not all of these people will move on, instead they may remain in this area as the unemployed, this in fact increasing the number of unemployed in our area. These people will show up on the welfare list, thus becoming our responsibility to house, clothe, and feed.

*Kim Dixon, What Happened to Fairbanks? The Effects of the Trans-Alaska Oil Pipeline on the Community of Fairbanks, Alaska, Westview Press, 1978.

Response MMP-5, RM-7:

There is a significant difference between people who would be interested in obtaining jobs at the proposed plant and the number who would eventually move to the study area. A recent study (Rand Corporation; "Why Families Move: A Model of the Geographic Mobility of Married Couples;" September 1976), indicates that new arrivals who are unable to find acceptable employment are likely to move again, often back to their original place of residence. One of the main findings of this study was that:

> "Household-level unemployment or dissatisfaction with a job does 'push' a family to move; families whose heads are unemployed or are dissatisfied with their jobs (employed, but looking for a different job) are more likely to move than those whose heads are not searching for another job. Recent arrivals to an area who cannot find acceptable employment are especially prone to move again."

While the recent layoffs in the steel industry might suggest a higher level of in-migration, it will be another three or four years (at a minimum before operations at the proposed plant begin. It is probable that by this time almost all of those workers would have found other suitable jobs, so that a move to the study area would be much less attractive. However, a substantial share (50 percent) of the jobs at the proposed plant were assumed to be filled by in-migration. A possibility does exist that some in-migrants might end up as welfare recipients in the Regional Study Area, but the number is likely to be insignificant.

Comment MMP-6:

In New Stanton, Pennsylvania when the employment offices were opened for applications for the automobile assembly plant a phenomena occurred which might be termed "the return of the native." The media reported that more than 5,000 applicants had formed a line on the first day with a surprisingly large number coming from relatively distant places. Their stories were similar: they were originally from the Region, but had moved to Long Island or Chicago, or Richmond for employment. Now they sought to leave their employment when an opportunity to return to their home community presented itself. The original impact area has been an area of out-migration for many decades, with the out-migration being caused primarily by lack of employment opportunities to accommodate all those entering the labor force. It seems probable that a repeat of this phenomena would occur both during the construction phase and the operational phase with the new Plant. Again, although these might be "original residents" their impact will be the same as any other in-migrant.

Response MMP-6:

These workers would not be considered original residents according to the definition established for this analysis.

While the example described in the comment is an interesting and frequent phenomenon, it has little bearing on the question of impacts. The comment states, "now they

sought to leave their employment when an opportunity to return to their home community presented itself." However, impacts are not measured by how many people apply for jobs or would like to move to the study area if they obtained jobs. The impact is made up of only those applicants who do obtain jobs and then in fact move to the area.

Individuals who had moved away from the Regional Study Area before being employed at the plant would be considered in-migrants. To some extent, however, these in-migrants would have an easier time finding homes, temporary accommodations, etc. in the area because of the help of friends and relatives. Similarly, these in-migrants would have an easier time (and less impact) adjusting to the social and community structures of their new home.

Comment MAP-7:

While out-migration has dropped in the principle impact area during the last decade, it is likely to decrease even further with the announcement of the construction of the new Steel Mill. Those people entering the labor force are likely to postpone out-migration and seek employment either in the new Steel Mill or in the favorable economic climate created by the Mill.

All of these factors seem highly likely. The scenario that only those who are needed for the construction or operation of the Steel Mill will be attracted to the area is unlikely, and there is no mechanism to assure that only those so needed will move into the area. Rather, those who perceive that they may be needed, or who hope to find opportunity in the invigorated economy will come. Not all will be successful in finding employment, and it is reasonable to assume that the unemployment level in the Regional impact area will remain parallel to the national experience. In-migration resulting from the construction phase is also minimally stated and then dropped altogether because such employment is of a temporary nature, and after 1990 would not be related to the Steel Plant. Several factors are likely to increase the permanent effect of migration from construction workers.

First, if the Coho Generating Unit is built during the 1980's near Girard, the attendant requirement for construction manpower will interact with the requirements for U.S. Steel and a synergistic effect will almost certainly occur amplifying the total impact beyond the sum of the two projects if they do not occur at the same time.

Secondly, the total construction period will extend over a nine-year period, and even with fluctuating manpower requirements the time span is long enough so that many workers will put down permanent roots. Again, it is unlikely that the number of people attracted to the area will exactly equal those who are needed.

Response MAP-7:

The number of in-migrants likely to move to the Principal Study Area, the number of construction workers who would establish permanent residences, and the number of "speculative" in-migrants (those without jobs) have been addressed extensively in Chapter Four of this EIS and responses to other comments. However, the figures used were provided by the applicant and the reviewer is cautioned that other reasonable projections exist.

As noted in the population projection section of Chapter Two of the EIS, net migration in the Regional Study Area is expected to account to a rather modest loss of less than 2,000 residents over the 1975-80 period. Some of these out-migrants would be young people who leave for higher education or elderly residents who leave for retirement or health reasons. Neither of these groups would be significantly affected by the creation of jobs at the proposed plant. Thus, while it is reasonable to assume that the "favorable economic climate" might cause some residents to postpone out-migration (especially those whose only reason for leaving was to find work), the number of such people is not likely to be significant.

Although the proposed project could cause some residents to remain in the area, it might also cause others to leave. In any community affected by new development, there are a few residents who would leave rather than accommodate change. A somewhat larger group of plant-induced out-migrants is likely to be made up of older residents who take advantage of housing price escalation to sell their homes and move to a warmer climate for retirement. On balance, the proposed project would probably have no significant impact on the net migration rates of the baseline population of the Principal Study Area.

Concerning the question of construction labor competition between the proposed project and the Coho generating station, there is no reason to assume any "synergistic" effect, particularly since preliminary schedules peak manpower demand at Coho would occur at a time when little or no construction was scheduled at the proposed plant site. While specific information about Coho was not available when the EIS material was prepared, it is believed that a reasonable "worst case" estimate would be a need for an additional 300 weeklies in critical skill categories if both projects are under construction at the same time. Under the "best case" estimate, Coho would provide continuous employment for the in-migrant and original resident construction workers idled between the two steps of the proposed plant.

Comment MAP-8:

The D.E.I.S. contains extensive discussions of two factors which, it is suggested, would mitigate against in-migration: the announced U.S. Steel policy to preferentially hire local residents; and the operation of the local trade unions in giving first priority to local construction workers and then metering the in-migration of additional trade union members as necessary. The effectiveness of these two procedures in minimizing in-migration should not be overestimated. The first policy may in fact induce outsiders to establish residence in the area prior to applying for employment. In the second case, the procedure should ensure that the longest term employment goes to local residents and this might help to reduce the impact of in-migration. Peak manpower estimates show that the maximum number of men who will work on the Plant will be substantially greater. Construction schedules, particularly for the technologically advanced facilities such as is proposed, do not always go as smoothly as forecast. Delays from late shipment of supplies and material, from adverse weather or from other unexpected problems require increased manpower input at a later stage. Projects such as this entail a fair turnover of workers resulting from the firing of those who are unable or unwilling to perform as required than from

workers leaving because they are tired commuting or unable to find adequate local housing. Out of this large number of men who are exposed to the Region, it is predictable that a fair number of them will find the area attractive as a permanent home and if they can find housing will bring their families into the Region. Nor will all of the workers be so highly skilled that they will be in demand for major projects in other parts of the country. Many of the unskilled or semi-skilled required by the project may seek and find alternative employment in the area at the conclusion of their construction work.

Response NWP-8:

During the preparation of the final EIS, a number of governmental and quasi-public agencies submitted independent population projections which, in their opinion, provided a more representative portrayal of the impacts associated with the proposed Lakefront Plant (refer to Chapter Four). On 13 September 1978, representatives of the Federal Regional Council and the Corps of Engineers met in Pittsburgh, PA, with Federal, State, and local agency officials to discuss the population projection issue. One of the topices of discussion involved the projected influx of construction workers into the impact area. Upon review of the various factors involved, the participants agreed that the projections used in the EIS represented the best case, that is, they assume that all construction workers available within potential commuting distance would be hired. Various representatives presented reasonable alternative projections to this scenario. However, due to the highly speculative nature of any projection of this type, the applicant's analysis has been left intact in the EIS for illustrative purposes. The Corps staff is cognizant of the fact that other projections may be more or less representative of future growth. Local governmental officials and agency representatives are encouraged to review all potential scenarios when planning for future growth and development related to the proposed plant. A copy of the minutes of the FRC meeting, along with the applicant's response, is attached to this statement.

Comment NWP-9:

Refer to ADR-3

Comment NWP-10:

Refer to ADR-3

Comment NWP-11:

Furthermore, growth dynamics may escalate the extent of growth beyond the level estimated by prudent economic forecast. The presence of large numbers of people and sizeable payrolls may very well spawn enterprises which might otherwise go unformulated. New industries or service operations may very well be initiated in the area, even though they won't be needed by U.S. Steel, but rather because the presence of U.S. Steel and the impact on the population may be perceived by the industrialists as being sufficiently propitious to offset his earlier doubts. Housing projects built to meet the need of the new employee at the Steel Plant may very well find a latent market on the already short housing supply of the Region. The projected growth added to the baseline population may very well suggest to some enterprisers that the size of the Regional market was reached a point where it can support some highly specialized service. Such growth dynamics are difficult to predict, they are observable in other growth impacted areas, particularly when spread over a ten-year time span. If the impact of such growth dynamics is difficult to measure in advance, knowledge of them should at least lead the prognosticator away from too conservative a projection of induced and indirect activity.

Response NWP-11:

The impact estimates include the effects of crossing service thresholds (i.e., when total population baseline plus impact become large enough to require new types or levels of service), but have not incorporated the significantly more speculative effects of the "positive growth ethic."

An extensive discussion of the development of the indirect and induced coefficients used in this analysis are contained in Working Paper III which was appended to the draft EIS. Due to the product mix of the proposed plant, the availability of several modes of transportation, and the marketing structure of the steel industry, there would be virtually no incentive for the plant's suppliers or customers to relocate to the Regional Study Area. As noted in Chapter Four of this EIS, one of these firms seeking a new plant location for reasons of its own might consider the study area more attractive because of the presence of the Lakefront facility. However, any indirect activity beyond the estimates presented must be considered highly speculative and probably not likely until the proposed plant has been in operation for many years.

Working Paper III also notes that the development of induced (consumer-related activities depends primarily on the population and industrial base of the area as well as the increase in direct and indirect payrolls. Thus, the estimates of these impacts are based on induced production coefficient which increases over the course of the projection period, reflecting rising population (baseline as well as impact) and an expanding commercial base. In other words, induced activity is projected to increase more rapidly than the increase in payroll would suggest incorporating the effects of "growth dynamics."

Comment NWP-12:

The D.E.I.S is far too conservative in estimating the indirect and induced impacts. By assigning more than half of the projected employment to "original residents," it greatly underestimates the need for new housing construction and related infrastructure and services. It assumes relatively small impact from the construction force of

10,000 workers. The majority of these it has projected would be weeklies residing too far to commute daily, and not so far that they could not reach home on weekends. The "weeklies" would occupy lower cost transient quarters within the Region and the D.E.I.S. presents a tabulation of the number of units available for such transients and concludes that they can be accommodated without difficulty. But during the week of August 7th, 1978 -- when impact from the Steel Mill was almost indiscernible -- virtually all of the motel rooms in the City of Erie and Millcreek Township had been sold out. If the scenario for accommodating construction workers proposed by the D.E.I.S. becomes a reality, then it will either cause an extensive secondary impact in providing new or refurbished transient facilities, or it will displace the resort activity centered on Presque Isle throughout the construction stage. Direct and indirect employment forecasts for the facility total over 9,400 jobs (including subcontractor maintenance, slag operation, plant food service, and transportation). Indirect employment adds an additional 3,200 jobs for a total employment projection of 12,675. The multiplier expressing the relationship of induced employment (service employment) to direct and indirect employment (basic) utilizing these figures is calculated to be .348. That is, for each job at the Steel Mill or serving the Steel Mill, only one-third of the job is estimated by the D.E.I.S. to be required for all additional related activities. Put another way, three out of every four jobs projected to be related to the installation of the Steel Mill will be in basic employment. Moreover, this very small ratio presumably incorporates the accelerating effect resulting from the construction phase of the facility.

Response NWP-12.

The issue of secondary employment created by the proposed project, and the problems associated with attempting to project such employment using economic base multipliers, were discussed at a meeting conducted by the Federal Regional Council (FRC) and the U.S. Army Corps of Engineers on 13 September 1978 in Pittsburgh, PA. Representatives of all governmental or quasi-public agencies which had submitted substantive criticisms were invited to participate. The participants generally agreed that the "best possible care" was presented and that an alternative projection should be used. This alternative projection (which is too lengthy to discuss in this response) is described in the minutes of this meeting which are appended to this statement (FRC correspondence dated 12 October 1978.

The availability of accommodations for weeklies is not expected to create difficulties in the Regional Study Area. The survey of motels and mobile home parks conducted in June 1977, indicated that available facilities outside the city of Erie would be more than sufficient to accommodate the maximum expected number of weeklies. Precisely, because the impacts of weekly construction workers are temporary (and fairly short-lived), there would be little incentive (or time) to develop new facilities for them. Rather, if all available accommodations in Erie and Millcreek were occupied by vacationers, weeklies would seek housing in other communities inside or outside the Regional Study Area. (Weeklies were distributed among the various communities in proportion to the availability of accommodations. As temporary work-week residents, they would not be expected to have strong preferences among the various communities.) Weeklies would probably not displace resort activity to any significant degree or for any significant time, however, some vacationers who come into the area without advance reservations might not be able to find accommodations during the peak construction periods.

Comment NWP-13:

A more reasonable multiplier -- using 1990 as a target date -- would be 1.0. Given the difficulty of finding a paradigm that exactly corresponds to the Regional impact area, it would probably be prudent to qualify any such projection by indicating a range of probability. A reasonable variation in that multiplier might range from a low of .75 to a high of 1.25.

These multipliers would result in the following estimated total impact employment by 1990:

	Low Estimate	Middle Estimate	High Estimate
Direct and Indirect Employment	9,400	9,400	9,400
Multiplier	.75	1.0	1.25
Induced Employment	7,050	9,400	11,750
Total Impact Employment	16,450	18,800	21,150

Response NWP-13:

Staff notes that many employment projections are possible, based on the variables involved and the number of different scenarios that exist, some of which are more likely to occur than others. The above projection represents one of these possibilities. A meeting, held by the Federal Regional Council on 13 September 1978, attempted to resolve these problems amongst the governmental and quasi-public agencies expressing concern in this area. Minutes of this meeting, along with the applicant's response, are appended to this statement.

Comment NWP-14:

Refer to ADN-3

Comment NWP-15:

Refer to ADN-3

Comment NWP-16:

Refer to CWP-5

Comment NWP-17:

Private enterprise is not likely to respond as projected in the Impact Statement. A developer of new housing, for example, will seek to minimize costs of land, reduce front end costs, and lower the risk of capital investment by spreading the market appeal of his project. For most, this will mean locating close to existing population centers in an effort to induce other buyers as opposed to locating near the Steel facility and limiting his sales to direct growth impact of the Mill. The same will be true of almost all investments by the private market. This suggests that growth would be distributed primarily according to size of community and secondarily to proximity to the proposed Steel Mill.

Comment NWP-18:

The consumers of the mid-1980's are very likely to vary substantially in their needs and lifestyles from those of the 60's. They will probably be substantially younger and have more diverse interests and lifestyles than steelworkers of the past recent decades. They are as likely to seek existing homes in central cities or truly rural and remote farm settings as they are suburban environments. They will probably seek a wide variation of housing environments and move far beyond the projected coastal community impact area.

The most common choice for families locating their home in this Region (and probably throughout the United States) is to prefer proximity to the facilities and services the family needs rather than proximity to the place of employment. More trips are generated by the family each week to these facilities than by the worker to his job. Moreover, it is easier for the worker to share rides to work than for the family to their facilities. Commuting distances of up to 50 miles each way are not unknown. This behavioral factor suggests that proximity to established communities will be a much greater locational factor than proximity to the proposed Plant. Growth in such communities as Erie, Edinboro, Meadville and the like is indicated, but not included in the D.E.I.S.

Some alternative evaluation of the wider geographic spread of this growth component, revised to reflect a more reasonable size of population would substantially improve the communities' ability to evaluate their options and measure the potential impact of their community. Alternative ranges of growth for communities would also be helpful.

Response NWP-17, NWP-18:

The applicant believes that the Coastal Communities distribution would combine proximity to jobs (in Conneaut) and commercial centers (Ashtabula City and Erie) along the Regional Study Area's better transportation corridors. Residential development in the area in recent years has occurred mainly in the suburban communities between Ashtabula City and Conneaut and west of Erie. Moreover, "gravity" models based on existing community size have had little success in predicting the distribution of population growth. Staff cautions the reviewer that other population projections and distribution patterns exist (refer to Chapter Four) and encourage local government officials and agency representatives to review these various scenarios to plan for future needs associated with the construction and operation of the proposed Lakefront plant.

Comment NWP-19:

The extensive detail generated by the Simpact IV Model with respect to individual communities will not be reviewed in full detail by this response because a new set of projections is needed. The present projections relating to land use needs, population densities, costs of public improvements, extent of facilities and service needs, and the resultant character of the communities do not reflect the realities of development foreseeable from this impact. Inconsistencies also result from the use of the model. For example, the suggested ease and modest cost of extending sewer and water lines do not match the projected rural low density residential development.

Response NWP-19:

There are no inconsistencies between water and sewer line costs and expected housing patterns if the assumptions detailed in the appropriate working papers appended to the draft EIS are considered. New housing is expected to be developed at relatively low densities (mostly single-family detached units with an average density of two-four per acre and townhouses with an average density of eight per acre), but not in a rural, dispersed pattern. Most housing is expected to be built in new subdivisions (by large developers) or on empty lots along existing streets (by smaller developers). It is also assumed (and required in many communities) that the cost of connecting individual housing units to main water and sewer lines will be borne by the developer and passed along to the purchaser in the total unit price. Further, it has been assumed that published plans for expanding water and sewer facilities and service will be completed as part of the baseline case. Therefore, the costs for extending sewer and water lines are those associated with connecting new developments to existing water mains and major interceptors. Changing the above assumptions (particularly more dispersed housing development or the failure to complete currently planned infrastructure) would result in significantly higher impact case sewer and water extension costs.

Comment NWP-20:

The DEIS not only provides misleading information to municipalities with respect to growth impact, but also provides clearly erroneous material which can further mislead them. It suggests, for example, that revenues generated for municipalities by the U.S. Steel plant will--at least in some cases--more than offset the costs of their response to the impact. One egregious error lies in the assumption that Springfield

Township could eliminate its property tax because of the wage taxes generated by employees in the Plant. Township income is estimated to soar by over $400,000 per year as a result of this. This assumption is based on the misconception that in Pennsylvania, employees pay wage taxes to the municipality in which they work. Actual wage taxes that would be collected by the township under the conditions projected in the DEIS would be in the range of $27,000 per annum, an amount equal to the wage taxes received by the township in 1976. The costs of accommodating the growth of population in Springfield Township are not likely to be offset by the increased tax revenues and an increase in property taxes would result.

Response NWP-20:

The structures and assumptions underlying the tax analysis were presented in the Revenue Estimation Working Paper appended to the draft EIS. No assumption was made that Pennsylvania employees pay wage taxes to the municipality in which they work since income tax is levied based on place of residence in Pennsylvania. However, one exception to the above involves employees working in Pennsylvania and living in Ohio. They are subject to the local income tax in Pennsylvania only. Thus, the income tax revenue increase in Springfield Township results from the payroll of in-migrants who move into the community and new and existing Ohio residents employed at the Pennsylvania portion of the U.S. Steel facility and related onsite operations (e.g., slag processing) located in Pennsylvania. Moreover, Ohio residents will pay the full one percent rate to the Springfield Township, with none accruing to the Northwestern school district.

There are several assumptions underlying the estimate of wages subject to taxation in Springfield Township. First, employees were assumed to work in Ohio or Pennsylvania as a function of the individual plant units located in each state and the employees required at each unit. Second, even though the site is, in fact, located in two states, it was treated as a single entity in terms of employee residence choice. That is, a worker's place of residence was assumed to be independent of his or her assignment to the Pennsylvania or Ohio portion of the site.

In view of the above, it is important to reiterate that elimination of the property tax was presented as only one alternative for Springfield Township. As a second alternative, elimination of the income tax was also presented. With no income tax revenues, property tax rates would indeed rise significantly although the rates would still be quite low. In 1986, the 210 percent increase in the property tax rate would increase the tax bill on a $40,000 home from $18 to $50. However, if the income tax were eliminated, the owner of a $40,000 house earning more than $8,000 per year would realize a net tax decrease. No matter what tax policy is eventually selected by Springfield Township, the U.S. Steel facility is still expected to account for more than two-thirds of the community's tax base.

Comment NWP-21:

The GM Assembly Plant in Lordstown, Ohio is referred to by the D.E.I.S. as a comparable project which had little effect on its metropolitan area. It is not comparable because of one important circumstance, while it was being built and brought into operation, the Youngstown-Warren area suffered large losses in basic employment in the Steel Industry, the Regional impact area for the U.S. Steel Mill, however, has experienced -- and is expected to continue to experience -- a steady growth.

Response NWP-21:

The reference to the GM facility at Lordstown is used to illustrate the expected secondary economic impacts in Springfield. Simply, Springfield, like Lordstown, is expected to be relatively free of "commercial sprawl" development because of limited infrastructure, limited land zoned for commercial use, and the proximity of urban centers. Specifically, the reference is meant as an example of an industrial development, which did not alter the essentially rural nature of its small host community.

No analogy was drawn between population impacts in Springfield and Lordstown or expected impacts in the Regional Study Area and the Youngstown-Warren SMSA. However, baseline manufacturing employment growth is expected to lag behind the rest of the regional economy through most of the projection period, and employment declines are expected in primary metals manufacturing.

Comment NWP-22:

Refer to CWP-1

Comment NWP-23:

The purpose of the Impact Statement to be sure is to measure only the impact resulting from U.S. Steel Plant. But the presentation of only this impact growth constitutes a substantial disservice to the local communities thus impacted. For purposes of adequately assessing the efforts and investments that are required in the Region and its communities, the Impact Statement should present a comprehensive assessment of the implication of total growth. The output of such assessment could easily be separated statistically to show that which results from baseline projections and that which results from U.S. Steel impact.

Response NWP-23:

A detailed description of the social and economic environment of the Regional Study Area without the proposed project, including projections of baseline growth through 1990 is presented in Chapter Two of the EIS, while Chapter Four describes the impact of the proposed project on this baseline environment. As implied in the comment, these impacts are defined as the difference between two separate cases namely, one that considers growth without the plant and the other that considers plant-related effects. However, the implications of total growth are not ignored.

Most of the tables contained in Chapter Four present values for impacts and baseline for specific years within the projection period and then a calculation of total impact as a percent of baseline. The reviewer can use these same tables to compare and/or combine total impacts and baseline growth. Moreover, the effects of combined impact plus baseline growth are discussed throughout the text of the EIS in cases where such a combination has significant implications.

Specific examples of significant combined effects include housing, where the requirements for total new units (impact plus baseline) are presented, and education, where a baseline decline in school enrollments is expected to reduce the severity of impacts. Perhaps most important is the issue of public expenditures and taxes. The calculation of tax rates must take into account current service needs and costs, baseline growth (or decline), and the plant-related impacts. In summary, the information needed by communities to plan for total growth is contained in this final EIS even though it is not explicitly labeled.

Comment NWP-24:

It is strongly urged that the D.E.I.S. be expanded to include a combined analysis of the U.S. Steel facility and the Coho Generating Plant. The combined impact of the construction activity for these two plants has already been eluded to and an effort to provide quantitative estimates of this impact should be included in the report.

Additionally, the primary impact on air and water quality of these two facilities should be jointly studied. The two projects are not inextricably intertwined; yet it is probable that growth of population will require additional generating capacity before the end of the next decade. The combined evaluation is, therefore, considered to be prudent.

Response NWP-24:

Based on the information that was available at the time the EIS material was being prepared, the effects of the Coho Facility on construction labor availability were analyzed. The conclusion reached was that the construction of Coho might require the temporary in-migration of an additional 300 weeklies over a two-year period, so that additional population and related impacts would be minor.

The combined effects of the Coho station and the proposed Lakefront plant on air quality have been incorporated into Chapter Four of the final EIS.

Comment NWP-25:

Refer to EDH-20

Comment NWP-26:

Refer to ADN-3

Comment NWP-27:

In dealing with sudden spurts of growth, however, underestimating growth has a reverse effect. Consider, for example, the investment that U.S. Steel will make in the construction of the project. The daily interest on this investment is so enormous that delays in construction cannot be tolerated. Construction workers must be brought into the area and construction expedited regardless of whether or not adequate facilities are available for them. Under these circumstances, competition for housing when it is in a short supply results in inordinate increases in rental costs. Similar marginal pressures increase the costs of all other services and goods for which the workers compete. The introduction of the permanent labor force in this situation, compounds the problems.

New facilities cannot be provided overnight in response to unexpected growth. In an effort to expedite these desperately needed facilities, traditional community standards with respect to growth management are necessarily set aside in response to the emergency. The worst example of this scenario of "too little-too late" occur in areas having a smaller population and economic base than the subject impact area. But even if the problem is proportionately less, it is still a problem and all efforts should be undertaken in advance to avoid it.

The growth and impact which will result from the proposed facility presents a challenge and opportunity to positively affect the quality of life of the people of the three County Area. Substantial investments will be required in housing, services and facilities, and this investment has the potential to improve existing communities. The people and agencies of the Region are eager to harness the positive potential of expected growth, and urge that the indicated revisions in the D.E.I.S. be made.

Response NWP-27:

The applicant believes that the addition of 15,800 new residents would have no adverse impact upon the Regional Study Area. However, the reviewer is cautioned that other population projections exist that reasonably predict an increase of 11,000 to 58,500 new residents (refer to Chapter Four). The incremental increase of these new residents may have an adverse impact on the various socio-economic areas listed in this statement. Local governmental officials and agency representatives are encouraged to review these various scenarios to plan for future needs associated with the construction and operation of the proposed Lakefront plant.

Comment NY-1:

Refer to GG-1

Comment OEPA-1:

The Draft EIS represents the initial effort in this program, whereby the impacts of the action are measured and mitigation measures discussed. Chief among the early problems has been the question of mitigation measures for the taking of Turkey Creek. Although Turkey Creek does not provide a unique beach fishery, it is enjoyed by only a few fisherman for a very short period of the year. We believe that if mitigation measures give consideration to the entire Lake Erie coast there are many things which can be done which would provide far more opportunities for Ohio fishermen than will be lost through the filling of Turkey Creek. Our Ohio Department of Natural Resources would be pleased to work with U.S. Steel officials to suggest such measures, to include construction of a fish hatchery or purchasing wetlands along the coast for use in fish production. The Department believes that it will also be necessary to construct "put and take" fisheries in the Conneaut area regardless of whether or not the steel plant is constructed.

Response OEPA-1:

The applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which calls for culverting a portion of the stream and eliminating the diversion channel. In order to encourage upstream salmonid migration, the applicant proposes to install a system of baffles and resting areas and a skylight system which will provide subdued lighting along the entire length of the culvert. The applicant proposes to augment low flow rates during peak migration periods by diverting a portion of the plant intake water into the upstream end of the culvert.

The applicant proposed to enhance the fishery potential of the area by providing stream habitat improvements in the lower approximately 460 meters (1,500 feet) of Turkey Creek between Lake Erie and the proposed culvert. Although the applicant does not plan to construct a fish hatchery on the site, the Ohio Division of Wildlife would be encouraged to utilize the lower portion of Turkey Creek as a salmonid stocking and nursery area. The applicant has agreed to permit fishermen access by boat to the mouth of Turkey Creek and the adjoining beach.

Comment OEPA-2:

The following are essential considerations for the development and implementation of the projects mitigation plan:

a. The loss of habitat, changes in water quality, effects upon upstream waters, and impacts on in-stream and Lake Erie aquatic life resulting from the possible loss of Turkey Creek. Of particular note is the loss of one of only two Ohio streams which provides unique beach fishing for salmonids. We believe that by putting Turkey Creek in a culvert through the plant area and exiting the culvert just north of the beach road, the beach fishery can be retained.

b. Access must be provided to Turkey Creek Beach (water access is acceptable since this area will only support a maximum of 10 beach fishermen) and to the U.S. Steel East Breakwater.

c. Habitat loss and water quality degradation due to pier construction and related actions.

d. Secondary effects on inland waters and natural areas with special emphasis on the Conneaut Creek corridor.

e. Terrestrial and wetland habitat loss due to site development.

Response OEPA-2:

Through interaction with the representatives of the various Federal, State, and local resource and regulatory agencies, a fish and wildlife management plan was developed for the Lakefront site. A summary of the elements contained in this plan is presented below.

Terrestrial Management Recommendations

- Partial replacement of lost habitat for selected target species of wildlife by means of intensive vegetative manipulation on a 456 hectare (1,127 acre) tract south of the Conrail tracks generally between Thompson Road and Eagley Road.
- Retention of the area adjacent to Turkey Creek between Stateline Road and Rudd Road in its natural state. This tract of land covers approximately 507 acres and lies within the fenced perimeter of the Lakefront site. The applicant has agreed to provide the Pennsylvania Game Commission and the Ohio Department of Natural Resources the opportunity and resources to conduct wildlife research on this site.
- Donation of a 38 hectare (94 acre) forested tract east of Elmwood Road and north of the Conrail tracks as an addition to Raccoon County Park or as a new Pennsylvania gamelands unit.

Aquatic Management Recommendations

- Stream habitat improvements downstream from the site of the proposed Turkey Creek culvert to be accomplished by the U. S. Steel Corporation in accordance with Ohio Department of Natural Resource specifications.
- Augmentation of streamflow between the upstream end of the culvert and Lake Erie by diverting a portion of the raw intake water into the creek.
- Preservation of the aquatic communities and stream oriented terrestrial communities upstream of the proposed culvert by precluding plant related development in this area.
- Fisherman access by boat to the beach areas adjacent to the mouth of Turkey Creek and the U. S. East Breakwater Extension.

The applicant's management plan would allow Turkey Creek to be maintained in its natural state except for the reach that would be culverted between State Line Road and a point approximately 1,500 feet above Lake Erie. Habitat improvement measures combined with low flow augmentation during periods of peak migration should increase salmonid usage of this watercourse. Further, losses of habitat associated with on-site construction would be minimized through the intensive management of upland habitat.

Plant related impacts on Conneaut Creek or other Lake Erie tributaries in the vicinity of the proposed site would be minimal since the plan to fill and divert Turkey Creek has been rejected by the applicant. As such, the mitigation plan for the Lakefront site does not include ameliorative measures for inland waters or natural areas.

The applicant has also revised the original pier extension and unloading dock proposal for Conneaut Harbor. Both structures have been redesigned to minimize the commitment of bottom habitat and improve overall water circulation. Additional information on this revised proposal is contained in Chapters One and Four of this Final EIS.

Comment OEPA-3:

The applicant should develop specific plans for the preservation of a green belt around the plant site to help preserve the aesthetic resources of the Lake Erie coast. Also the secondary impacts of plant-induced growth could have a significant adverse effect on the Conneaut Creek valley. In private ownership, the Conneaut Creek gorge from interstate 90, north to the Keefus Road bridge is considered to be one of the finest natural areas in the State of Ohio. Other inland areas may be adversely affected by secondary growth. Attached is a list of natural areas in the vicinity of the proposed plant with descriptions and locations. The Department of Natural Resources is currently evaluating such areas and developing priority lists. If local interests are planning measures to protect the Conneaut Valley and other important natural resources from encroachment or undesirable developments, the Department is prepared to cooperate with guidance and technical assistance through its Urban Rivers, Natural Areas and Scenic Rivers program and Critical Areas Program.

Comment PGC-4:

Paragraph 3 of the "primary facility related impacts" section of the summary (page iii) states, construction of the Lakefront plant would involve the alteration of approximately 1,290 acres of the 2,760 acres comprising the project site. No development is planned for the remaining 1,470 acres.

Paragraph 1.354 indicates 1,290 acres would be altered during plant construction and that during plant operations, several hundred additional acres would be cleared and converted for solid waste disposal.

Table 2 - 295 (page 2-618) lists vegetative and land use acreages as trees - 2,199 acres, shrubs - 2,395 acres, herbs - 315 acres and developed - 533 acres for a total project area of 5,442 acres.

Paragraph 6.18 (page 6-13) indicates approximately 1,800 acres, exclusive of existing and proposed raw materials handling facilities, would be developed at the Lakefront site.

Subsequent to the release of the draft E.I.S., representatives of U.S. Steel have stated almost all the project area would be impacted during future plant expansion.

From these conflicting statements and data, it is not possible to determine either the total area of land or the total amount of wildlife habitat to be impacted during plant construction or operation. Such information is necessary as the basis for determining existing wildlife resources and the degree of impact and should be presented including a designation of the areas and locations for each state.

Response OEPA-3, PGC-4:

The primary impact area for plant development covers approximately 1,766 acres. Maps delineating the primary impact area, existing ecotypes, resident woodcock feeding habitat, wildlife, mitigation areas, and areas not planned for development have been included in Chapter Two of this Final EIS. The applicant has not identified the areas to be used for solid waste disposal, but is currently evaluating potential disposal sites within that portion of the Lakefront site that would actually be developed.

Within the primary impact area, 1,290 acres would be used for the proposed plant facilities. At least a portion of the remaining 476 acres would be used as a raw materials handling area.

Chapter Six of the Final EIS has been corrected to state that "The proposed Lakefront plant facilities require development of approximately 1,290 acres exclusive of the existing, and proposed, raw materials handling area.

Representatives of the U. S. Steel Corporation have indicated that only those portions of the Lakefront site necessary to facilitate construction of the proposed plant would be cleared. The remaining areas would be left in their natural state with exception of those tracts that would be managed to increase the productivity of certain wildlife species. In addition, the existing vegetation between Lake Erie and Lake Road would be left intact except in the vicinity of the raw water treatment plant and the oxygen plant. Company officials have also acknowledged that all of the larger contiguous areas under their ownership might eventually be impacted during future (post-1990) plant expansion. However, there is no conflict with the acreage figures reported for this facility, since future expansion proposals for the Lakefront site do not exist. Should such development be proposed by the applicant, a similar environmental review process would be instituted analagous to the one already underway.

Comment OEPA-4:

At the meeting of all State agencies held on November 4, 1977, the Lead Agency Concept for development of the EIS was discussed and the Ohio Department of Transportation (ODOT) was assured that there was agreement between the federal agencies (specifically the Corps of Engineers and Federal Highway Administration) regarding this project.

It was requested at that time that ODOT be furnished a copy of the agreement so as to determine which agency regulations would be applicable in complying with the NEPA requirements.

In absence of such an agreement, it is difficult to provide substantive comments on the document regarding its compliance with applicable transportation regulations.

We were anticipating that this document would be prepared to a level of detail that would permit the ODOT to proceed with the necessary public hearings and design of the transportation projects that are identified as needed for the site development and operation of the U.S. Steel Plant.

The information needed to satisfy Federal Highway regulations (FHPM-7-7-2) is lacking. There appears to be lack of coordination at both the Federal Division and Federal Region Levels.

Comment OEPA-5:

Since the social, economic and environmental impacts on the transportation related mitigation measures are not adequately addressed to satisfy FHWA regulations it will be necessary for ODOT to prepare an environmental document for any transportation projects resulting from the development of the U.S. Steel Plant.

Naturally, ODOT's concern in the development of this site is that adequate consideration is given to providing not only direct access to the plant area, but also, that other primary and secondary feeder routes that will be affected by the site and ancillary development are recognized and identified as to their specific needs.

This information can then be utilized by the responsible local planning agency and incorporated in their future planning.

Since this information was not forthcoming then, we request that the Corps refrain from identifying a "preferred alternative" for transportation improvements. We requested that the transportation alternatives be treated equally and referred to as "alternate actions for the amelioration of the traffic congestion projected to occur during the construction and operation of the proposed plant".

Response OEPA-4, OEPA-5:

The analysis of transportation impacts is based on several different access and egress scenarios involving potential new highway routes or modifications of the existing highway network. By illustrating these alternative transportation schemes, the reviewer should not be led to believe that the Corps of Engineers is advocating or rejecting certain types of highway construction projects. For example, the Interstate 90 direct access link was identified as a potentially viable plan because of the degree of benefit provided and the relatively low magnitude of construction related environmental impacts. However, there may be other solutions which would afford better traffic flow at an even lower environmental cost.

Comment OEPA-6:

Refer to CCM-1

Comment OEPA-7:

Refer to EDH-40

Comment OEPA-8:

Refer to EDH-40

Comment OEPA-9:

5. Regarding pier construction and intake and outfall construction. Any required blasting should be confined to the period June 1 through August 31 to avoid destruction of fish and ichthyoplankton during the critical spawning and migration period. A fish kill would be investigated by the Division of Wildlife (ODNR) and the applicant could be charged to pay compensation for the fish kill.

Dredging and construction activities associated with the Conneaut Harbor East Pier loading dock, including channel maintenance dredging should be confined to the period June 1 through August 31. This will reduce impacts to spawning native species, such as smallmouth bass, and immigrating/emigrating adult and juvenile salmonids.

Response OEPA-9:

If a Department of the Army permit is issued for the proposed work, special time restrictions on work activity will be considered where appropriate in order to protect fish spawning and migration runs.

Comment OEPA-10:

Refer to ADN-6

Comment OEPA-11:

Refer to CRG-41

Comment OEPA-12:

Sanitary Wastewater Collection and Treatment Section 2.372: Figure 2-25 appears to depict 201 Facilities Planning Areas, not 1990 service areas.

Response OEPA-12:

The above referenced figure depicts both 201 Facilities Planning Areas and 1,990 sewer service areas. Even without the Lakefront plant, sewer facilities in the regional planning area are expected to be expanded to service the current 201 Facilities Planning Areas. To resolve the problem, the legend in the figure has been modified.

Comment OEPA-13:

8. Ashtabula City Service Area, Section 4.311: This section mentions North Kingsville being added to the Ashtabula City Facilities Planning area. We have no knowledge that such an event will take place. The Ashtabula City Facilities Plan is nearing completion at this time. At present, North Kingsville is ranked number 357 on our Municipal Project Priority list. We expect that they will carry out their own Facilities Planning.

Response OEPA-13:

Appropriate revisions have been made in the Section entitled, Springfield Township, of the EIS to include the information contained in Comment OEPA-13.

The information contained in the above comment has been incorporated into the appropriate section of Chapter Four of the Final EIS.

Comment OEPA-14:

Surface Runoff - Construction, Section 4.495: "The applicant has indicated that it will implement the provisions of the Pennsylvania Erosion Control Plan on all parts of the site, including those in Ohio." The design of sediment basins and control of construction area runoff appears adequate provided the erosion control plan is followed closely during construction. Provisions should be made for the on-site monitoring of construction and erosion control activities.

Response OEPA-14:

Clarification of the intent of this comment was provided by the Ohio Environmental Protection Agency in a letter dated 21 February 1979. It was intended that on-site monitoring be performed by the applicant during the construction phase to insure that the elements contained in the Pennsylvania Erosion Control Plan were followed on the Ohio portion of the Lakefront plant site. The applicant has agreed to perform the necessary monitoring.

Comment OEPA-15:

Impacts on Inland Waters, Section 4.564: This section is badly written. As it now appears to state, the applicant feels that the pollution caused by the storage area will not be significant since the existing pollution will "mask" this storage area pollutants. Given that Conneaut is embarking on a facilities planning program to abate pollution this "masking" effect will end. A re-write of the section appears in order.

Response OEPA-15:

The implication that storage area runoff was insignificant because of the masking effect of pollutants in Conneaut Creek was not intended. Instead, the point was made that the plant related runoff contribution would be difficult if not impossible to detect, given the present quality of water in Conneaut Creek.

Comment OEPA-16:

Protected Species, Section 4.771: Access to the project site by zoologists and botanists from the Department of Natural Resources should be provided. The purpose would be to perform biological site evaluations for the development of a program to determine the practicability and feasibility of species relocation. This relocation program should not be limited to only protected species, but should include any species of plant or animal for which relocation is justifiable, feasible, and practical. This program would be coordinated between the Division of Natural Areas and Preserves and the Division of Wildlife (ODNR).

If a relocation program is determined not to be practical, on-site biological evaluations by departmental staff would still be valuable in determining appropriate mitigative measures to help compensate for the loss of special steel plant site elements.

Attached is a list of species, on the Natural Heritage Program inventory, which are located within the project site. Some of these species are reported in the Draft EIS.

Comment TU-18:

Siting the plant within the habitat of the spotted turtle which is endangered in Ohio would be a disservice to the ecology.

Response OEPA-16, TU-18:

Access would be provided to the Lakefront site, so that representatives of the Ohio Department of Natural Resources could determine the feasibility of capturing and relocating selected wildlife species or removing and transplanting important plant species. If such actions appear to be warranted, the applicant is prepared to cooperate to the maximum extent practicable.

The spotted turtle was observed most frequently in the shallow pools and ditches paralleling the southern edge of the Norfolk and Western Railroad right of way. Originally, the Draft EIS reported that this habitat could be potentially eliminated through the changes in surface drainage resulting from the diversion and filling of Turkey Creek. Since this plan is no longer under consideration, the facility related construction impacts on this species are expected to be minimal. Further, the area in which this habitat is situated is part of a larger land tract that would be managed and protected in accordance with the applicant's fish and wildlife protection plan for the Lakefront plant site.

A limited number of spotted turtles were observed in the area between the former Perry Bluff Ore Storage area and Lakeshore Road. Unless captured and relocated, these individuals would probably be lost during the plant construction phase.

Comment OEPA-17:

Although the Draft EIS is relatively thorough in its evaluation of geologic conditions in the site area, it should perhaps be noted that additional data on recession rates of the Lake Erie shoreline are available from the Ohio Division of Geological Survey. Of particular interest are:

Carter, C.H., 1977, Sediment-load measurements along the United States shore of Lake Erie: Ohio Geological Survey Rept. Inv. 102, 24 p.

Ohio Division of Geological Survey, Lake Erie shore recession line maps: Open file maps 98 and 99.

In addition to the recession rates presented in the Draft EIS (Table 2-313, page 2-712), Carter (1977, page 13) reports a very slow rate (less than one ft/yr, .30 M/yr) for the shore reach from the Pennsylvania Ohio line to the coal docks at Ashtabula River.

Response OEPA-17:

The reports cited above were used to estimate the impact of potential shoreline stabilization schemes at the Lakefront site on regional beach nourishment. Information contained in the open map files was also evaluated. However, data related to the Lakefront site were updated and revised utilizing the results of a shore line recession study by the consulting team of D'Appolonia, Haley, and Aldrich.

Comment OSC-1:

Refer to DOC-6

Comment OSC-2:

Refer to A-4

Comment OSC-3:

Refer to A-4

Comment OSC-4:

Refer to A-4

Comment OSC-5:

Refer to LWV-1

Comment OSC-6:

We are concerned, overall, with the challenge to the evaluation procedures under NEPA that are present in the present instance. We have indicated, earlier, our regret that the detailed technical comments from the appropriate experts within the state and federal agencies were not available for presentation at the recent set of public meetings. Here, many of the prospective neighbors of the proposed mill were learning (for the first time) what might be in store for their health, their livelihood, and their chosen way of life. This belated recognition, by the affected public, is distressing evidence of the agonizingly slow process of diffusion of information that attends our current procedures for public participation. Despite the hearings, press releases, headlines and organized information efforts, dating back as far as February, 1977, we find a sense of grievance. This suggests that additional modes of information sharing and policy reevaluation will be needed in the months ahead.

Comment PHCOE-5:

"Finally, the Draft Environmental Impact Statement lacks full public participation. From the outset, the citizens of this community have been shunned and side-stepped in the inclusion of facts into this statement."

Response OSC-6, PHCOE-5:

The public hearings which you refer to were conducted prior to the 8 September 1978 deadline date for comments on the Draft Environmente' Impact Statement. Although copies of the original letters of comment are contained in this Final EIS we recognized the need to disseminate this information to the general public as quickly as possible. In this regard, a public information meeting was held on 18 October 1978, in Conneaut, OH, to acquaint interested individuals with the concerns and issues raised by governmental agency representatives. In addition, copies of all comments pertaining to the Draft EIS were bound into two volume sets and mailed without charge to public libraries, environmental groups, public interest organizations, and interested individuals, as well as representatives of Federal, State, and local agencies.

Throughout the review of this permit application, public involvement has always been a prime concern. Between 1977 and 1978, we held seven public hearings, one public information session, and a number of informal meetings and workshops. News releases were issued on a periodic basis to keep the public abreast of project developments and on several occasions the staff involved in the preparation of the Environmental Impact Statement participated in panel discussions which were either televised or broadcasted over local radio stations. During the summer of 1977, hearing files were established in Buffalo, NY, Erie, PA, Conneaut, OH, and Cleveland, OH, so that the public would have access to all of the data that were used to assess the impact of the proposed steel mill on the environment. In summary, we have made every effort to develop a flexible program that would increase public awareness and involvement. If this plan has not been successful as indicated in your comment, then we would welcome suggestions which would help us to improve it.

Comment PDER-1(a):

Refer to EPA-94

Comment PDER-1(b)

Refer to ADN-1

Comment PDER-2:

The Draft EIS estimates that hydrocarbon emissions in the regional study area will increase by 6% as a result of the plant and 8% overall. Since this is a nonattainment area for photochemical oxidants/hydrocarbons and permit action is anticipated prior to July 1, 1979, trade-offs must be found for those increased emissions. If permit action is delayed until after July 1, 1979, a demonstration of reasonable further progress toward attainment through emission reductions must be made or emissions from the new plant must not exceed emissions for new sources projected in a revised state implementation plan.

Response PDER-2:

Nonmethane hydrocarbon emissions from the proposed plant could act as precursors in the formation of atmospheric ozone. Since the area has been designated as nonattainment for ozone, an emissions offset policy for the hydrocarbon precursors from the proposed plant must be implemented. If the offset permit is sought prior to 1 July 1979, the EPA offset ruling would be in effect. Two key conditions of the offset ruling are:

- For every ton of emissions from a new source, there must be an offsetting emission reduction from existing sources sufficient to represent reasonable further progress toward attainment.
- The new source must meet the lowest achievable emission rate (LAER).

After 1 July 1979, the States are given a choice of two options for handling new source growth:

- The States can develop quantitative margins for growth within the State implementation plan by imposing emission limitations on existing sources to a greater degree than minimally necessary to meet standards; or
- They can continue some form of case-by-case emissions offset approach.

The States are presently revising their implementation plans to indicate how they will cause nonattainment regions for ozone to be in attainment by 1987.

The nonmethane hydrocarbon emissions from the proposed steel plant are estimated to be 1,318 metric tons per year for which emissions offsets would be required. The offsets should be made with respect to the Ohio and Pennsylvania implementation plans for the nonattainment region.

The Corps staff, has requested guidance from EPA in a letter to Region V concerning the regional offset policy specific to the proposed plant. General interpretive rulings have been made previously by the USEPA (21 December 1976, 41 FR 55524 and 16 January 1976 44 FR 3274). These rulings indicated that offsets should be carried out in order to show that reasonable further progress toward attainment would be achieved. The specific amounts and locations of the offset emissions are yet to be determined. The Corps letter to the USEPA dated 20 November 1978 and the USEPA response dated 12 February 1979 are appended in this Final EIS.

Comment PDER-3:

Refer to CRG-43

Comment PDER-4:

1. Generally, the U.S. Steel proposals to protect water quality, with regard to plant discharges, are acceptable. With the exception of ammonia, the company proposes to meet the new point source effluent requirements for the integrated iron and steel industrial water category. These point source effluent requirements and the reasonable amount of initial dilution will not create conditions that are toxic or lethal to fish within a 12-acre mixing zone and will meet State water quality standards outside the mixing zone. The Draft EIS should describe how the standards for ammonia will be met.

Response PDER-4:

The applicant's position on the remanded effluent standards for ammonia is that they are not attainable with the technology that is presently available. It is their opinion that the treatment system proposed does, in fact, represent Best Available Technology.

The technology planned for coke plant consists of ammonia stills equalization followed by biological treatment. At the blast furnace, the treatment technology envisioned at this time includes recycling with a minimum of blowdown and subsequent treatment of the blowdown by alkaline chlorination (a system that is recognized as best available technology under the remanded guidelines).

Should new technology become available that is classified by the USEPA as best available, then the applicant will reexamine the treatment processes for the blast furnace and coke plant. Representatives of the U. S. Steel Corporation have advised that they will comply with the levels equivalent for any known and properly designated best available technology. Further, the applicant has indicated that unless best available technology is demonstrated for ammonia, variances would be sought to discharge at concentrations that exceed water quality standards.

Resolution of this issue as well as others involving water quality can only occur during the review of the NPDES permit application by the U. S. Environmental Protection Agency and the State of Ohio.

Comment PDER-5:

Refer to CRG-41

Comment PDER-6:

Refer to CRG-29

Comment PDER-7:

Refer to DOC-1

Comment PDER-8:

Refer to DOC-1

Comment PDER-9:

Refer to COM-1

Comment PDER-10:

Refer to AHC-3

Comment PDER-11:

Refer to EPA-146

Comment PDER-12:

Volume III, page 4-486 - The subject of "Geologic Hazards" is dealt with in only one very short paragraph. There should have been discussion of the geologic hazards due to lakefront erosion and an additional discussion of whether the seismicity of the area poses any problem in the construction design of the plant. Lakefront erosion and seismicity are both problems to be dealt with in the Lake Erie area.

Response PDER-12:

The Lakefront plant site is located within a "Zone 2" region on the Seismic Risk Map of the United States (ref.: International Conference of Building Officials, 1976). A "Zone 2" region is defined as having a moderate seismic risk, moderate damage according to Intensity VII on the Modified Mercalli Intensity Scale of 1931 (ref.: Hodgson, J.H. 1964, Earthquakes and Earth Structures, Prentice-Hall, Inc., Englewood Cliffs, New Jersey). This intensity is equivalent to a definitely noticeable event with negligible damage in buildings of special design and construction and slight to moderate damage in well-built ordinary structures. Geological data show no special earthquake-related hazards on this particular site. Due to the widespread occurrence of dense, cohesive soils, the potential for seismically induced liquefaction on the site is negligible.

Application of the average annual shoreline recession rates reported in Chapter Two shows that the only structure likely to be threatened within 50 years is a pond in which incoming lakewater will be treated for use within the Lakefront plant. The lakewater intake pumphouse, located approximately 25 meters from the bluffline, would be protected riprap and thereby reducing the potential for damage caused by shore erosion.

Comment PDER-13:

Refer to EPA-69

Comment PDER-14:

In Volume II, page 659, there is a typographical error in the heading of the page. It now reads "Regional Ecology" and should read "Regional Geology." In the index to the volumes the correct terms "Regional Geology" are used.

Response PDER-14:

The heading has been revised in response to the comment.

Comment PDER-15:

Refer to ADM-3

Comment PDER-16:

Refer to EPA-12

Comment PDER-17:

3. The information in the Draft EIS on ground water impacts implies that through adherence to technical construction standards for on-site sewage disposal systems, there will be no significant adverse impacts on ground water quality. Such a premise overlooks the impact of the density of development potentially utilizing on-site systems over the long term if public sewerage is not provided in heavily built-up areas. Under these circumstances, consideration must be given to the potential for hydrologically overloading the receiving soils and/or the ability of the soils to deal with chemical contaminants such as nitrate nitrogen.

Comment PDER-18:

4. The report lists regular maintenance and pumping of septic systems as a mitigating measure against the potential for ground water contamination. Failure to maintain on-site sewage disposal systems results in clogging of soils in absorption fields which usually leads to system malfunction and surfacing of sewage liquids. The primary advantages of good system maintenance are increased longevity of systems and prevention of public health hazards due to discharge of inadequately treated sewage effluent. Such maintenance does little to protect ground waters.

Response PDER-17, PDER-18:

The septic tanks used to treat wastes from individual residences generally consist of two chambers in series. Wastes enter the first compartment, in which the solids settle towards the bottom (sedimentation) and start decomposing. An outlet near the top of the first compartment serves as an inlet to the second compartment. The second compartment provides an additional opportunity for solids to settle out and decompose, and thus serves to protect against the discharge of sludge and other material that might escape the first chamber. Effluent from the second chamber is normally discharged to leaching fields where it percolates into the ground, eventually mixing with the groundwater. The solid sludge remains in the bottom of the compartments where it accumulates and continues to undergo decomposition. In general, the sludge is removed every two to three years.

For these tanks to work properly, it is important that wastes move through the system fairly slowly, allowing ample time for the solid fractions to settle out. Accumulated sludge reduces the effectiveness of the system, causing wastes to move through faster. Normally, these systems are designed to detain wastes for approximately 24 hours, even with two to three years accumulation of sludge. If more sludge is allowed to accumulate, then the effluent may be significantly degraded, polluting adjacent soil and possibly affecting ground water quality. If the soils become clogged, then the sewage effluent may rise and surface.

Proper maintenance can eliminate the problem described above. However, proper maintenance in and of itself does not eliminate the ground water pollution potential of a septic system. The effluent from a properly maintained but improperly designed system may adversely affect ground water quality. This could occur if a tank develops a crack, allowing sludge or sludge leachate to leak out; if the leaching field is too small; or if wastes containing unusual constituents (e.g., chemicals) are discharged. If a system has these problems, then ground water pollution could occur in spite of proper maintenance.

Septic tank problems already exist in the study area under baseline conditions. If these devices continue to be used without adequate design, construction and maintenance, the problems will continue and to some degree will be aggravated by the additional population due to the proposed plant. However, the potential adverse impacts of on-lot septic systems could be totally averted by adopting building codes which prohibit their use in new multiple housing developments. Appropriate regulatory agencies at the State or local level could also control problems with existing systems by requiring rigorous inspection and where necessary corrective maintenance each time the title passes to a new owner.

Comment PDER-19:

Refer to DW-3

Comment PDER-20:

The Draft EIS should provide a complete listing of types of environmentally sensitive areas found in the Regional Study Area. The Draft EIS does mention some types of environmentally sensitive areas such as floodplains, prime farmland, and wetlands, however, a comprehensive checklist would help municipalities identify environmental features which may need protection. The Pennsylvania Coastal Zone Management Program conducted a comprehensive environmental resource inventory in the Lake Erie area. This program can be used as a reference for identifying the types of environmentally sensitive areas found in the Regional Study Area.

Response PDER-20:

The list of environmentally sensitive areas in the Draft EIS was far more comprehensive than the information reported in the survey conducted by the Pennsylvania Coastal Zone Management Program. During the compilation of this list baseline information was obtained from the Pennsylvania DER, U. S. Geological Survey Quadrangle maps, and the Pennsylvania Scenic Rivers Inventory. Sensitive areas identified included major wetlands, sites with potential natural values, prime agricultural lands, national landmarks, selected historic sites, scenic river systems, conservation area stream watersheds, and flood plains.

The above list is by no means exhaustive but it is illustrative of the general environmental character of the regional study area. Acquisition of additional information on the location and identification of other presently unlisted environmentally sensitive areas would be costly and of questionable benefit to this impact analysis. Municipalities have firsthand information on the resources within their political boundaries and are better equipped to develop a list of sites which may require protection.

Comment PDE[illegible]:

Refer to FEN-7

Comment PDOT-1:

PennDOT and/or FHWA highway projects involving public recreation lands are considered to be Section 4(f) Involvements under both Pennsylvania Act 120 and United States Code 49, 1653(f). These involvements require detailed statements that are usually prepared with a DEIS and FEIS and extensive interagency coordination. If the proposed access roads do not involve public recreation lands, this should be made clear in the FEIS.

Comment PDOT-2:

The DEIS does not clearly indicate that there are no Historical or Archaeological sites of local, state or national significance affected by the proposed access road construction. These involvements also require detailed statements and extensive interagency coordination. If the proposed access roads do not involve sites of local, state or national significance, this should be clarified in the FEIS.

Comment PDOT-3:

Page 4-738 of the DEIS raises the question as to whether or not the proposed access roads are involved with wetlands. This DEIS falls under the President's Executive Order 11990 - Protection of Wetlands. Subsequently, the Corps of Engineers and FHwA have specific procedures to follow with wetland involvements. If the access roads will involve true wetlands, these procedures must be followed. If not, it should be made clear in the FEIS that the access road development does not involve wetlands.

Comment PDOT-4:

Since the proposed access roads may encroach on the floodplains of tributaries to Turkey Creek, a flood hazard evaluation should be conducted to ensure that no highway improvements will cause flooding during a 100 year flood. The FEIS should state the results of the evaluation.

Comment PDOT-5:

In light of the Pennsylvania Fish Commission's and the U. S. Environmental Protection Agency's serious objections to the channelization (as shown in the DEIS) of Turkey Creek, we are concerned that the access road stream crossings (most likely pipes and culverts) in the headwaters of Turkey Creek do not prevent the migration of fish and other aquatic organisms. A general statement should be made in the FEIS that PennDOT will coordinate the culvert designs with the Pennsylvania Fish Commission to provide for the migration of fish where warranted.

Comment PDOT-6:

We are concerned that the previous public involvement process for the overall proposal will not satisfy the highway design/EIS public meeting or hearing requirements for the access road development. With this in mind, we would like to coordinate with the lead agency to ensure that this condition is corrected.

Comment PDOT-7:

The DEIS does not adequately address the relocation impacts of the various access road alternatives. The FEIS should assess the relocation impacts on people and businesses to the degree possible in the primary highway development phase. In addition to addressing these impacts, the FEIS should describe available relocation housing in the area and the ability to provide it for displaced families.

Response PDOT-1-7:

The total responsibility for highway siting, design, construction, and compliance with the National Environmental Policy Act rests with the Federal Department of Transportation and its counterpart agencies at the State and local governmental level. At the present time, the transportation proposals contained in this Environmental Impact Statement are only defined in general terms, since the site specific data necessary to perform a detailed impact assessment are not available. Presumably, this information will be generated by the appropriate transportation agencies if and when a formal decision is made to proceed with construction of the Lakefront plant.

However, in an attempt to address the above comments, the following responses are provided:

PDOT-1: The access road alternatives identified in this Final EIS do not appear to involve public recreation lands as defined in Section 4(f) of the DOT act.

PDOT-2: The transportation alternatives contained in the EIS do not conflict with with any of the known cultural resources sites identified in the current National Register of Historic Places. However, no statement can be made regarding the effect on unknown historic or archaeological resources since the required cultural resources surveys have not been conducted. Interagency coordination should be initiated by the appropriate transportation planning agencies to insure that cultural resources are properly protected.

PDOT-3: At this point in time it appears that the various alternative access routes would not traverse any freshwater wetlands. However, a site specific reconnaissance should be conducted to insure that this is in fact the case. Development of wetlands adjacent to waters of the United States may require a permit from the Corps of Engineers in accordance with the provisions set forth in Section 404 of the Clean Water Act.

PDOT-4: Without specific right of way and design information, it is impossible to determine the potential for flooding in the tributaries of Turkey Creek. The flood hazard evaluation should be incorporated into the highway engineering process to insure the development of an environmentally sound design.

PDOT-5: The diversion channel has been rejected by the applicant in favor of a culverting scheme for the lower reach of Turkey Creek. Corps staff concurs that PennDot should coordinate with the Pennsylvania Fish Commission to insure that the needed highway culverts do not impede fish spawning and migration.

PDOT-6: The Corps of Engineers public involvement process could not satisfy Department of Transportation requirements in this area since no specific data were provided regarding highway siting, design, construction methodologies, or degree of compliance with the National Environmental Policy Act.

PDOT-7: In the case of the I-90 direct access link, it is probable that two-four homes would be displaced as a result of highway construction. If sufficient data are available to predict the housing impacts associated with other transportation access schemes.

Comment PDOT-8:

Refer to DOT-7

Comment PDOT-9:

Refer to DOT-2

Comment PDOT-10:

The DEIS traffic projections for the study area highway network do not reflect traffic growth induced by secondary development. Because of the potentially serious impact these induced traffic volumes may have on all highways in the study area, the DEIS traffic projections should be adjusted to account for this secondary development.

Response PDOT-10:

The impacts of secondary development on highway traffic may be gauged by reference to employment impacts. Secondary employment in 1990 due to the proposed plant was estimated at 4,950 jobs of which 80 percent (3,960) would be induced jobs and dispersed throughout the Regional Study Area (Draft EIS, pages 4-14 thrugh 4-20). This may be compared to direct employment due to plant operations of 8,450. Total secondary employment impact represents 2.1 percent of baseline employment for the area in 1990. Since this secondary employment is well dispersed throughout the area and is such a small percentage of baseline employment, it should not significantly affect the traffic analysis in the vicinity of the plant.

Secondary traffic due to household travel of plant employees and household travel of the secondary employment discussed above, would generally peak in mid-morning to late-morning and early evening. These secondary traffic peaks would be smaller than the primary peaks due to plant employee traffic. Household traffic would be dispersed throughout the Regional Study Area and would not significantly affect the traffic analysis in the vicinity of the plant.

Comment PDOT-11:

Refer to CRG-20

Comment PDOT-12:

Our review of the 3,600 page DEIS provided us with a challenging yet cumbersome experience. Although the quality of the material presented in the DEIS was satisfactory, the quantity was overwhelming. We strongly suggest that an "Executive Summary" be prepared for the FEIS that would serve a two-fold purpose:

1. Provide agency decision-makers with a capsule of significant issues on which to base their decisions. Agency managers do not have time to read the 3,600 page document.

2. Provide the general public and mildly interested parties with sufficient information to satisfy their concerns or at least help them recognize them. This may also reduce requests for copies of the costly DEIS.

Response PDOT-12:

Proposed guidelines established by the Council on Environmental Quality and applicable Corps of Engineers regulations require the inclusion of a summary in each draft or final Environmental Impact Statement released to the general public. In accordance with these equirements, a summary 19 pages in length was prepared and bound into the draft EIS on the proposed lakefront steel plant. This document contained a description of the action, synopsis of project related primary and secondary impacts, and a list of alternatives.

During the EIS review period, the summary itself, was reproduced and more than 2,500 copies were either distributed through the mail or given away during meetings, hearings, and workshop sessions. By making this document available to anyone without cost we were able to acquaint a broad spectrum of the general public with the overall proposal. We intend to utilize the same approach when the final EIS is released for review by the general public.

However, we cannot agree with your statement that the summary alone can be the foundation for an agency decision. The sole purpose of the summary is to provide a mechanism for rapid issue identification, which in turn leads the reviewer to more detailed discussions presented in the EIS. Thorough examination of all the factors relating to a particular issue is necessary to achieve a sound basis for any decision which effects the future growth and development of the region.

Comment PFC-1:

Refer to CCM-1

Comment PFC-2:

Refer to CCM-1

Comment PFC-3:

Refer to CCM-1

Comment PFC-4:

Refer to CAM-5

Comment PFC-5:

Refer to A-7

Comment PFC-6:

Refer to CCM-4

Comment PFC-7:

Refer to DA-1

Comment PFC-8:

Page 1-212, Table 1-14. Waste water effluent components expressed as long-term averages are unsatisfactory. The aquatic environment will be most effected by potential short-term maximums. Aquatic organisms, including fish, benthic invertebrates, etc., can be killed by any component or combination of components exceeding the lethal limit for a short period of time even though the long-term average is well below the lethal limits.

Response PFC-8:

The evaluation of the environmental impacts associated with the discharge of plant effluents includes data on "worst case" concentrations that might be expected to occur about once per year as well as long term averages (one month to one year).

Comment PFC-9:

Refer to CCM-1

Comment PFC-10:

Refer to

Comment PFC-11:

Refer to DOC-1

Comment PFC-12:

Refer to CCM-1

Comment PFC-13:

Refer to CCM-1

Comment PFC-14:

Page 1-373 (1.466). U.S. Steel has not followed Title 25, Chapter 102 in the placing of culverts already installed. What assurance have we that they will do any better in building the plant?

Comment PFC-20:

Page 4-586 (495). U.S. Steel has not implemented an effective erosion control plan in the culvert construction already completed.

Response PFC-14, PFC-20:

The installation of culverts was part of a project by the Bessemer and Lake Erie Railroad to expand railyard capabilities in the vicinity of the Pittsburgh and Conneaut Dock Co. raw materials handling facility. This project is not related to the applicant's proposal to build a steel plant on the Lakefront site.

Regulatory agencies with a permitting responsibility must institute effective monitoring and enforcement programs to insure compliance. The Erie County Health Department, acting on behalf of the Pennsylvania Department of Environmental Resources did take appropriate action in the above case.

Since the U. S. Steel Corporation was not involved in this project, it is unreasonable to assume that the erosion control plan for the Lakefront site would be implemented in the same manner.

Comment PFC-15:

Water Quality Impacts/Eastern Basin

Page 1010 (2.781). There is some indication that Pennsylvania waters of Lake Erie have improved during recent years. In this whole draft environmental impact statement there is nothing on the eastern basin which, because of prevailing current, could be the recipient of possible pollutants from the proposed U. S. Steel plant. It would be very desirable to have some stations further east in Lake Erie.

Response PFC-15:

The aquatic sampling program for Lake Erie in the vicinity of the Lakefront Plant site was reviewed and approved by representatives of the various regulatory and resource agencies. During the development of this program representatives of the Pennsylvania Fish Commission advised that they would be sampling to the east of the site and that the data collected would be made available to the individuals involved in the preparation of the Environmental Impact Statement. However, due to some oversight, this information was never provided.

Comment PFC-16:

Aquatic Baseline

Page 1022 (2.788). Commercial fishery should be expressed in catch per unit effort rather than total catch. There is much less effort being expended to catch the commercially available species now than in the past.

Response PFC-16:

The information contained in the Draft EIS was obtained from the National Marine Fisheries Service which only reports data in terms of total catch. However, catch per unit effort was reported for yellow perch in Figure 2-145 of the Draft EIS. The comment that there is less effort being expended to catch commercially available species (in the U. S. waters of Lake Erie) is acknowledged.

Comment PFC-17:

Correction

Page 1025 (2.791). New York and part of the Pennsylvania waters are not in the Central Basin but in the Eastern Basin. Pennsylvania has a small section of the Central Basin.

Comment PFC-18:

Corrections

Page 1034 (2.794). There apparently is a line (or lines) missing at line 18 or 19 of this paragraph.

Response PFC-17, PFC-18:

The text of the statement has been modified in response to these comments.

Comment PFC-19:

Refer to CCM-1

Comment PFC-20:

Refer to PFC-14

Comment PFC-21:

Refer to CRG-51

Comment PFC-22:

Refer to NAS-1

Comment PFC-23:

Refer to EPA-146

Comment PFC-24:

Refer to CRG-29

Comment PFC-25:

Refer to CCM-1

Comment PFC-26:

Refer to CCM-1

Comment PFC-27:

Refer to DOC-1

Comment PFC-28:

Refer to DOC-1

Comment PFC-29:

Aquatic Baseline/Adult Fish

Page 4-792 (4.709). Gill netting does not necessarily give relative abundance of fish species as some species, particularly smallmouth bass, will avoid nets. So the figures given are relative abundance in the small sample, not necessarily relative abundance at the 30-foot contour.

Response PFC-29:

It is acknowledged that due to the inherent selectivity of fish collection techniques, relative abundance figures may be slightly misleading. This point was emphasized in the section entitled Offshore and Inshore Community Composition contained in Chapter Two of this Final Environmental Impact Statement

Comment PFC-30:

Page 6-53 (6.92). If Turkey Creek were to be relocated, the relocation should be completed before the plant or fill begins. Once channelized to Conneaut Creek, the relocated channel might be delayed or even cancelled.

Response PFC-30:

The discussion of alternatives to the proposed action, contained the assumption that Turkey Creek would be temporarily diverted into Conneaut Creek if Turkey Creek were relocated to the east. This assumption is not valid and has been deleted from the appropriate section of this Final EIS. In response to comments made by the agencies and the general public, the applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which calls for culverting a portion of the stream and eliminating the diversion channel.

Comment PFC-31:

Page 6-68 (6.107-6.113). If properly accomplished, a green belt along Turkey Creek could preserve the existing aquatic biota.

Response PFC-31:

The applicant believes that the setback of plant structures from the unaltered stream would not guarantee that Ohio instream water quality standards would be met in the lower reaches of Turkey Creek. Water quality could be affected by surface runoff, deposition of airborne particulates, and spillage at required bridged and conveyor belt crossings.

Recognizing the adverse impacts associated with filling and diverting Turkey Creek, the applicant has rejected the original proposal and adopted a new plan which calls for culverting a portion of Turkey Creek and eliminating the diversion channel. Appropriate revisions have been made to incorporate the new plan into Chapters One and Four of this Final EIS. The new proposal is designed to maintain the existing interface between Turkey Creek and Lake Erie, encourage salmonid migration through the culvert, enhance the salmonid fishery below the culvert, and permit fishermen access by boat to the mouth of Turkey Creek and the adjoining beach area.

Comment PFC-32:

Refer to CCM-1

Comment PFC-33:

Refer to CON-10

Comment PFC-34:

Refer to CON-10

Comment PFC-35:

Refer to A-4

Comment PFC-36:

It is the opinion of the Pennsylvania Fish Commission that the Draft Environmental Impact Statement as presented is inadequate and should not be accepted until a study of the proper magnitude is conducted which will show with some degree of confidence the real impact, adverse or otherwise, of the proposed huge industrial complex. To approve this document and allow U.S. Steel to proceed could prove disastrous for the aquatic communities involved. The present aquatic communities, streams and lake, are providing sport and commercial (lake) fisheries. These fisheries deserve to be and should be protected. From the material presented, it cannot be determined if they will be protected adequately.

Response PFC-36:

The data presented in the Draft EIS are the result of intensive onsite collection efforts designed to assess the aquatic communities of the lake and streams. An interdisciplinary technical team composed of representatives from Federal and State agencies and Corps staff was set up to direct the collection effort, review the data to insure technical accuracy, insure an unbiased review of baseline information, and identify alternatives that would lessen the overall impact of the steel mill. This technical team, which included representatives from the Commonwealth of Pennsylvania, agreed that a fourteen month baseline study would provide sufficient information for an accurate analysis of project impacts. Additionally, this team provided input relative to impacts of the proposed action. Staff believes that the type of review which was performed is of the proper magnitude and accurately reflects both adverse and beneficial impacts. As indicated in the Foreword of the Draft EIS, the document is not in itself a decision-making tool but rather is used to assist the District Engineer in the public interest review prior to determining whether or not the Department of the Army permits, as requested, can be granted. Since the issuance of

the Draft EIS some project modifications and additional mitigative measures have been added which will reduce the impact on aquatic communities. Among these changes are modifications of the pier design, mitigative measures for Turkey Creek, and the elimination of the Turkey Creek diversion channel and drop structure at Conneaut Creek. In addition, the operation of the intake and discharge system will be subject to appropriate analysis and review by the responsible Federal and State regulatory agencies to insure that aquatic resources are adequately protected.

Comment PGC-1:

Table 2.399 (page 1003) lists 27 species of mammals as being collected on the Lakfront site. Apparently, this should be worded as collected or observed as it states only 24 species were collected, and it is doubtful if species such as white-tailed deer and beaver were actually collected. Although it indicates the most prominent species, there are reasons to believe this list is neither complete nor accurate.

For example, the only species of bat listed is the Keen bat (Myotis keenii). The presence of this species is somewhat surprising, as it is an uncommon species of cave bat, and its identification is open to question as it is almost indistinguishable from the little brown bat (Myotis lucifugus) which is the most common bat in Pennsylvania. The adequacy of the sampling technique can also be questioned when such common species as the little brown, big brown, and red bats are not reported.

Comment PGC-2:

Since no specific details of the sampling techniques are presented in the draft E.I.S., its potential effectiveness cannot be evaluated. However, as there is the reasonable probability of finding upwards of 45 mammal species on the project area, a listing of only 27 is indicative of inadequate sampling. Existing mammal survey data should be reviewed and additional field surveys contemplated to insure the accuracy and completeness of this table. We recommend Mammals of Pennsylvania (Doutt, et. al, 1966) as a reference text.

Table 2.398 (page 2.985) does not provide an adequate listing of the bird species that are found on the project area.

Response PGC-1, PGC-2:

Table 2-399 has been modified in response to the comment.

The publication Mammals of Pennsylvania by Doutt, et. al. was cited on numerous occasions in the various reports summarizing and on-site field investigations conducted by Aquatic Ecology Associates, Inc. (Copies of these reports were periodically sent to all technical team members including the designated representatives for the Commonwealth of Pennsylvania.) Most of the information contained in this reference was acquired through the efforts of the Pennsylvania Mammal Survey that was completed 30 years ago. However, the check list contained in this publication deals with mammals that were collected or observed within the broad geographical area of northwestern Pennsylvania and not necessarily Erie County.

The checklist compiled by Aquatic Ecology Associates was based on information contained in Mammals of Pennsylvania as well as the following additional references: Mammals of Canada by Banfield (1974), Mammals of the Great Lakes Region by Burt (1967), and The Mammals of North America by Hall and Kelson (1959). These publications were reviewed to obtain additional information on the distributional ranges of mammal species.

The Mammal Survey lists seven species of bats that were taken in northwestern Pennsylvania, but only one species, Myotis lucifungus, was taken in Erie County. On the basis of this information it does not seem unreasonable that only one species was encountered on the Lakefront site. The single bat specimen was sent to the Carnegie Museum for taxonomic verification. Although originally identified as a Keen bat (Myotis keeni) in the Draft EIS, specialists at the museum determined that it was actually the little brown bat (Myotis lucifungus).

Sampling techniques are described in the field reports prepared by Aquatic Ecology Associates, Inc.

Comment PGC-3:

On page 2.3.3.1-4 of the draft Environmental Impact Assessment, prepared by Arthur D. Little, Inc., the statement is made, the consultant has reason to feel the Indiana bat (Myotis sodalis) is reasonably likely to occur on the project area. The Indiana bat is classified as an endangered species on the U.S. Fish and Wildlife listing of endangered and threatened wildlife. Paragraph 2.924 of the draft E.I.S. states this species could possibly occur on the project area but has not been reported in recent years and is listed as reasonably likely to occur in paragraph 2.926. The possibility of this endangered species being present has thus been raised, but we are not aware of any efforts on the part of U.S Steel, its consultants, or the Corps of Engineers to accurately determine its status. Such an effort should be undertaken, especially since the identification of bat species cannot be readily made through normal field observations.

Response PGC-3:

An exhaustive field search for roosting bats was conducted by Aquatic Ecology Associates, a consultant of the applicant. No Indiana bat (Myotis sodalis) or any indication of their presence on the Lakefront site have been found. The Indiana bat is known to hibernate in caves in the winter, the summer habitat has long been unknown although some evidence suggests that they may roost in dead trees, usually in flood plains which are its preferred foraging areas. Specific requirements pertaining to habitat are not known nor are food preferences. The recent decline in population is attributed to commercialization of caves, increased recreational use of caves, and vandalism. Insecticide poisoning by direct contact or by contaminated food sources is not believed to be the problem. However, destruction of food organisms by massive

spraying programs seem likely. The population may be limited by the population capacity of the winter hibernation caves. Ninety percent of the estimated total population congregate in only four caves.

Most information indicates that winter habitat is limiting. There are no caves on the Lakefront site which would provide suitable winter hibernating shelter. Summer habitat of a limited quantity may be available in the flood plain areas of Raccoon and Turkey Creek. It is not known if the quality of this habitat is adequate since little is known about the ecology of the Indiana bat. Similar habitat meeting the general requirements of the species occurs widely over its known range. Considering the facts - the extensive field search, the limited habitat of questionable quality coupled with the fact that wintering shelter requirements appear to be limiting, it appears highly unlikely that the Lakefront site would be of any significant value to the Indiana bat. The text has been changed to reflect this determination.

Dr. Daniel G. Serdar[illegible] January 17,1[illegible]

Aquatic Ecology Associates

5100 Centre Avenue

Pittsburgh, Pennsylvania. 15[illegible]

Dear Dan:

Last Tuesday I took the specimen of bat we had obtained at Conneaut to the Carnegie Museum for verification. It turned out that the species is Myotis lucifugus ,the little brown bat rather than Myotis keenii as I had thought. Having only a single specimen it was difficult to know where it fit within the range of measurements given in the taxonomic key I used. The main characteristic used was the length of ear and the length and shape of the tragus within the ear. When I first examined it I thought the ears extended beyond the snout when laid forward. But the curators thought not enough and they are more knowledgable about bats than I. My error is in not having taken it to them for verification and for that I apologize.

While this was not circled in red on the comments sheet I would like to comment on the Game Commission's reaction to the EIS evaluation of the Indiana Bat,Myotis sodalis. From the sound of the EIS it seems I believed there was a reasonably likely chance that this species is on the Conneaut site. I dont know how this could be inferred from the report I submitted to AEA. I simply stated that Areas 5 and 7 were the only areas at Conneaut to resemble in any way the summer habitat for M.sodalis as described by Humphrey et al,(1977). From cursory observation throughout the whole study period it did not seem as though the area was a "hotbed' of bat activity.

I am enclosing a time and expense sheet.

Sincerely,

Harry M. Cunningham,Jr.

Comment PGC-4:

Refer to OEPA-3

Comment PGC-5:

Refer to FWS-25

Comment PGC-6:

Different terminology is used to describe cover types in paragraph 2.744 than is used in the key on Figure 2-136, and there is no clear definition given of either. The same holds true for the "negative"? community descriptions in Table 2-394.

Study area 4 is listed as intermediate old field grass-goldenrod-wild carrot association. It is actually an early old field-grasses-aspen-willow-cattail-phragmites association.

Study area 5 is shown in Figure 2-136 as being in the grass and forbs stage It actually contains low, sparse and bushy shrubs in addition. Paragraph 2.750 states silky dogwood is scarce here; it is actually quite abundant.

Paragraph 2.752 fails to list aspen as a subdominant for study area 9 while actually it is. Then it goes on to discuss the presence and value of this species.

While the vegetative analys , seems basically to have been well done, conflicting presentations as illustrated above, raise questions as to its accuracy and validity.

Response PGC-6:

Chapter Two, Section 2.744 has been changed to clarify terminology of cover types used on Figure 2-136.

Seasonal data obtained from transects that traversed the center of Study Area 4 showed a diversity of woody plants. Alder, willow, cottonwood, and quaking aspen are invading the area, but are primarily at the perimeter of this study area. Data presented in Chapter Two of the statement indicate that the perimeter of the old iron storage field is classified as tall slender shrubs while the interior is recognized as a graminoid-forb vegetation type. If the entire ore storage area were to be classified as a single community, then the graminoid-shrub designation would be appropriate. However, invasion and establishment of woody plants has occurred to the point where they represent a distinct biotic community.

The major concern appears to be the ecological impression of the iron storage area as a single community or as distinct communities within the confines of the old iron storage field. Succession has progressed sufficiently to identify distinct, cohesive, biotic units within the area.

Due to an oversight, Study Area No. 5 was improperly identified in Figure 2-136 of the Draft EIS. Actually, this site is two fields to the west. This figure has been corrected accordingly.

The observation that the eastern and western edges of Study Area 9 had several stands of aspen is acknowledged. However, their size put them into the tree category and were considered as such. The discrepancy is due to the use of the ornithologists description of the area. The reference to "A few stands of pole-stage aspen. . ." probably involved the terminal points of the line transects which extended beyond the defined limits of Study Area 9. In addition, designation of these trees as pole-sized also excludes them from the shrub designation.

Comment PGC-7:

Figure 2-137 (page 2-963) is listed as indicating environmentally sensitive areas on the proposed project site. The Game Commission's field surveys show the areas indicated in the draft E.I.S. as "important mammal (sic) habitat" and "important game bird habitat" (neither term defined), are grossly inaccurate. The indicated mammal habitat excludes most of the white-tailed deer and fox squirrel habitat. The indicated game bird habitat excludes major sections of ruffed grouse habitat. In addition, this map conflicts with the descriptions of the bird and mammal usage of the nine terrestrial biotic community study areas listed in paragraphs 2.748-2.753.

Figure 2-141 (page 1006) indicates woodcock and snipe nesting areas on the proposed project site. Our field surveys indicate the woodcock areas are illustrated in a very general way. From the material presented, it is easy to assume this map was developed from field investigations made by the consultant. We have reason to believe it indicates the general region identified by the district game protector to the consultant for further study.

As a result of factors such as those discussed above, the draft E.I.S. fails to identify the types and amounts of wildlife habitat to be adversely impacted by development of the Lakefront site. This situation must be corrected.

Comment PGC-13:

Prior to the initiation of the consultants' study, woodcock were identified as the most significant wildlife species present, and extensive studies by the consultants were anticipated. Such studies should have included breeding season population studies, nesting studies and fall population studies.

The U. S. Fish and Wildlife singing ground survey is the established technique for conducting a woodcock breeding season census. This method gives a relative, not actual, population density value. Due to uniform procedure, results from routes throughout the country can be compared and evaluated.

The consultants used a technique apparently of their own design, the results of which are meaningless (Table 2-400A, page 1307). The nesting study is at best inadequate, and the fall population study is nonexistent.

The Game Commission did conduct singing ground surveys and fall flushing studies both on and off the project area. These data are presented in Table 2-4006 (page 1007) and Table 2-401 (page 1008). These were designed as baseline studies to supplement those of the consultant. While providing more information than obtained from the consultants' studies, they are still not adequate to properly evaluate the area's woodcock populations.

Comment PGC-16:

The draft E.I.S. does not present any useful determination of either actual or relative population levels of the wildlife species present on the project area and, therefore, does not measure the reductions that would result from plant construction.

These deficiencies can be corrected in several ways. First, data from the Game Commission's Environmental Impact Review Manual (Palmer, 1977) can be utilized to calculate population levels for white-tailed deer, cottontail rabbits, fox squirrels and ruffed grouse. (This information has already been supplied to A. D. Little and the Corps of Engineers).

For other mammalian species, equivalent population tables (Mohr, 1947) can be used to approximate population levels.

Rechecking of avian survey data should allow determination of relative population levels for many bird species. Additional field investigations will be needed on woodcock.

Response PGC-7, PGC-13, PGC-16:

Important gamebird and mammal habitat shown in Figure 2-137 of the Draft EIS was compiled from data collected by the Aquatic Ecology Associates field team during May 1977. The map was not prepared for the purpose of displaying the habitat for all mammal and bird species instead it was intended as a guide to the environmentally sensitive areas of the Lakefront site.

It is true that the habitat of the white-tailed deer and fox squirrel was not included in this figure. However, discussions pertaining to these species were presented elsewhere in Chapter Two of the Draft EIS.

Additional information on woodcock populations that was provided by the applicant's consultant and the Pennsylvania Game Commission have been included in this Final Environmental Impact Statement. The discussion includes a qualitative interpretation of wildlife habitat rather than a quantitative analysis. Population estimates are subject to extreme fluctuation which make them poor indicators of overall value. Diversity of wildlife and habitat quality are more important indicators and should be used to assess construction related impact.

Comment PGC-8:

Refer to FWS-8

Comment PGC-9:

Existing wildlife population levels must be determined on an actual or relative basis prior to calculating the degree of reduction.

Comment PGC-15:

Paragraphs 4.619 through 4.638 (pages 4-733 to 4-738) deal with impacts on the terrestrial biota. They state in very general terms that plant construction would destroy wildlife habitat and wildlife populations. Given the lack of a proper assessment of existing wildlife resources, the superficiality of these comments is understandable. It is also unacceptable in dealing with impacts of this potential magnitude.

Comment PGC-22:

Paragraphs 5.92 through 5.99 (pages 5-34 to 5-37) discuss unavoidable impacts on the terrestrial biotic environment. This discussion is extremely superficial, both in describing the impacts and detailing mitigation and replacement procedures. It does not present any material useful to the Game Commission in evaluating these factors.

Response PGC-9, PGC-15, PGC-22:

Wildlife population levels are extremely difficult to determine. Variable factors include density that changes with time, sex, and age structure, social organization, natality, and mortality rates are only a few of the factors involved. It is seldom, if ever, possible to observe all of the various characteristics in the field. A more efficient method of determining wildlife values is to analyze the habitat available. The amount and distribution of food, shelter, and water in relation to the mobility of the animal is important. The kind of vegetation, distribution, quantity, and quality are all important and needs of an animal will vary with the seasons.

An intensive inventory and classification of vegetation was undertaken by the applicant's consultant so that the Corps staff could make sound judgments on habitat and wildlife values. Input from various Federal and State agencies such as the Pennsylvania Game Commission contributed to this evaluation. The Final EIS has been modified to include updated information on the wildlife habitat of the Lakefront site's plant-related impacts, and mitigation recommendations.

Comment PGC-10:

Table 2-398 (page 2-985) indicates relative abundance of bird species on the project area. The accuracy of these ratings does not appear adequate in many cases. For example, woodcock are listed as "common", while some gull species, flickers and red-breasted mergansers are listed as "abundant". In actuality, woodcock population levels are significantly greater than those of the other three species. Also, the significance of the terms used to describe relative abundance are not defined nor is it clear whether these are terms developed by the Audubon Society, A.O.U. or by the consultant. The bird census routes shown in Figure 2-139 (page 1004) and Figure 2-140 (page 1005) do not appear adequate to properly determine abundance of waterfowl and other aquatic and wetland species.

Response PGC-10:

The ratings that appeared in the Draft EIS should have been accompanied by the qualifying statement:

In interpreting relative abundance terms, it is necessary to consider the species habits and habitat. For example, two species may both be designated as common, but because of habits and/or habitat characteristics, one species may have restricted distribution within a prescribed area while the other may be widely distributed.

In addition, the same relative abundance term may be used to describe a carnivorous bird near the top of the trophic structure of a biotic level. Such a designation does not suggest that the two species are equally abundant, but must be interpreted in the context of the ecology of the two species.

The relative abundance designation should not be used as the sole criterion for determining the importance of a species on the site.

The reviewer should also consider the residency status and the distribution as well. For example, two of the species questioned are the Red-breasted merganser and the American woodcock. An examination of Table 2-398 presented in the Draft EIS, indicates that the Red-breasted merganser is designated as a common-to-abundant transient found only in Area 6, while the American woodcock is listed as common, occurring as a transient even though it nested on a substantial portion of the site and was recorded from 16 of the 27 observation areas. This information, in conjunction with the description of the significance of the site as prime woodcock nesting habitat, should serve to avoid confusion about the status of these two species or other species observed.

The relative abundance terms used here were adapted from: Wood, Merrill, Birds of the State College Region, Pennsylvania, Bulletin 558, The Pennsylvania State College School of Agriculture, Agricultural Experiment Stations, State College, PA, 1952. This literature citation was inadvertently omitted from the Draft EIS.

The Lake Erie observation points were omitted from Figure 2-139 but were shown in Figure 2-136 of the Draft EIS.

Comment PGC-11:

Paragraph 2.774 (page 2-984) states that mammals were collected along designated transects so population estimates could be made. However, no population estimates are included.

Response PGC-11:

Wildlife population levels are extremely difficult to determine. Variable factors include density that changes with time, sex, and age structure, social organization, natality, and mortality rates are only a few of the factors involved. It is seldom, if ever, possible to observe all of the various characteristics in the field. Mammal inventories were conducted to determine populations of species present, not numbers of individuals. Diversity of fauna is far more important in determining ecological impacts.

Comment PGC-12:

Paragraphs 2.775-2.779 (pages 2-984 to 1010) detail the major game species on the area. This listing includes beaver and red and gray foxes. It omits two important game species, the ruffed grouse and the fox squirrel. Such errors indicate an inadequate knowledge of the wildlife of the project area.

Response PGC-12:

Data contained in Table 2-398 of the Draft EIS indicate that the ruffed grouse was common on the Lakefront site and considered to be a permanent resident. This particular species generally nests in open wooded areas or edges of wooded areas. The presence of the fox squirrel was documented in Table 2-399. This particular species occupies the Lakefront site on a year round basis and was observed along Elmwood Road and Study Areas 3 and 7 during 1977.

Additional population and habitat data have been provided by the Pennsylvania Game Commission since the release of the draft and where appropriate have been incorporated into this Final EIS.

Comment PGC-13:

Refer to PGC-7

Comment PGC-14:

Refer to FWS-60

Comment PGC-15:

Refer to PGC-9

Comment PGC-16:

Refer to PGC-7

Comment PGC-17:

Hunting in Pennsylvania is a major form of outdoor recreation and a major revenue source. Over one million Pennsylvania residents hunt, spending over $250,000,000 annually in pursuit of their sport. In 1976, over 35,000 residents of Erie County purchased hunting licenses and spent an estimated $8,750,000 on hunting and hunting-related activities.

Paragraphs 2.269 through 2.278 (pages 2-323 to 2-340) discuss existing recreational facilities in Pennsylvania. No data are presented regarding hunting opportunity provided by the proposed plant site and only cursory mention is made of hunting activity throughout the region.

Paragraph 4.185 (page 4-208) indicates successful hunting will not be possible on the developed plant site.

This information is inadequate to determine hunting opportunity provided by the project area and the loss that would result from its development.

Such information can be developed from information on the economic aspects of hunting in Pennsylvania (Hartman, 1973) and from hunting activity and economic data in the Environmental Impact Review Manual. Figures on loss of hunting man-days and revenue reductions should be included.

Response PGC-17:

As indicated in Chapter Two of the Draft EIS, hunting is recognized as a major recreational activity in both Ohio and Pennsylvania. The statement also contains tables which show that hunting acreage is still available in the impact area. Additional information pertaining to the loss of hunting opportunity and the value of kill losses has been included in Chapter Five of this statement in response to the comment.

Hunting opportunities at the proposed plant site have been restricted since 1977 when the applicant posted this parcel of land. Since this is private property and restrictions on hunting are not likely to be lifted in the future, the quantification of losses in terms of revenue reductions would be of little value.

To offset habitat losses and potential reductions in the numbers of certain wildlife species, the applicant has developed a fish and wildlife management plan for the Lakefront site. Under this proposal, the 1,127 acre land parcel at the south end of the site between the Conrail and Norfolk and Western rail lines would be managed to increase productivity for certain wildlife species. A second tract of land situated upstream of the proposed culvert for Turkey Creek would be left in its natural state but would not be formally managed by the applicant. This "greenbelt" area occupies approximately 504 acres. In addition, the applicant has agreed to donate a 94 acre tract of land east of Elmwood Road, which could be used as a new State gamelands unit or as an addition for Raccoon County Park.

Comment PGC-18:

The relocation of Turkey Creek is discussed on pages 6-63 to 6-68. As described in paragraph 6.91, 33,000 feet of channel would be filled while 16,000 feet of relocated channel would be constructed for a net loss of 17,000 feet of channel. According to

the initial relocation proposal as developed by D'Appolonia Associates, net loss in channel length would be 10,000 feet. We are concerned that this additional 7,000 foot loss now proposed would present problems in obtaining proper stream gradient and flow characteristics.

The relocated channel will require proper stabilization and detailed plans for doing so should be supplied. The information supplied in paragraph 6.93 is inadequate.

Comment TU-17:

Turkey Creek

18. A further adverse effect of relocation: The possible loss to the State of Ohio of the stream and of a surf fishery at the mouth of the stream if relocation design places the stream wholly within Pennsylvania. The document does not adequately discuss this problem.

Response PGC-18, TU-17:

In response to comments made by agencies and the general public, the applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which calls for culverting a portion of the stream and eliminating the diversion channel. Although the eastward relocation of Turkey Creek is discussed in the EIS as a possible alternative action, this action is not considered preferable to the culverting plan due to high costs and an uncertain chance of success in creating the desired habitat. A description of the culverting proposal, an analysis of its effect on the environment, and a discussion of the related fish and wildlife management plan has been incorporated into Chapters One and Four of this Final EIS.

Comment PGC-19:

Detailed riparian revegetation plans should be developed and presented. The material in paragraph 6.95 is totally inadequate in our opinion.

Comment PGC-20:

Paragraph 6.106 states the applicant has studied the proposed alternative, finds that the costs generally outweigh the questionable benefits and decided not to give it further consideration. Part of the EIS process is the evaluation of feasible alternatives. This unilateral action by the applicant is at best inappropriate in light of the interest shown in this proposal by the Game Commission and other review agencies and specific requests for a detailed development of this concept.

Response PGC-19, PGC-20:

The applicant does not consider the eastern relocation of Turkey Creek to be a practical solution. To begin with, the cost of creating a new creek bed with all of the topographic, geologic, and edaphic attributes of the original watercourse would be significant. Secondly, the potential for creating an environment comparable to that which already exists in Turkey Creek is not high due to the dearth of information on ecosystem dynamics. Evolution of plant and animal communities would be tenuous at best, and it is likely that one severe storm event could obliterate the progress that had been made over several years or even a decade.

Relocation of plant structures is not considered to be a viable alternative for several reasons. First, water quality standards in that portion of creek traversing the developed portion of the plant site could not be guaranteed due to the potential for deposition of airborne particulates and spillage of materials along bridge and conveyor crossings. Secondly, certain portions of the creek would have to be culverted and filled to accommodate access roads for plant vehicles. In some cases, land would have to be cleared to provide an unobstructed right-of-way for conveyor crossings, while grading of the flood plain or relocation of the stream channel would be needed to accommodate the required structural supports. Finally, the applicant has stated that relocation of the plant structures would reduce plant efficiency and prevent future expansion of the site should it be required at some future date.

In response to the concerns expressed by agency representatives and the general public, the applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which involves the culverting of a portion of the creek channel and implementation of a program for onsite management of aquatic and terrestrial habitat. A description of this proposal and the fish and wildlife management plan for the Lakefront site has been included in this Final EIS.

Comment PGC-21:

Refer to CDM-1

Comment PGC-22:

Refer to PGC-9

Comment PGC-23:

Refer to EDM-13

Comment PGC-24

Refer to COM-1

Comment PGC-25

Refer to ADN-3

Comment PGC-26:

Refer to ADN-3

Comment PGC-27:

Paragraph 2.730 (page 2-948) discusses forested areas in Erie County based on 1954 data which indicates 130,000 acres were wooded. Soil Conservation Service land use inventory data from 1967 indicates 189,777 acres were forested land. Even more current data are available from Bureau of Forestry, Pennsylvania Department of Environmental Resources. The use of such dated material is unwarranted.

Response PGC-27:

Data on forested areas were provided, so that the reviewer would have a general understanding of availability of such resources in the counties surrounding the proposed site. The discussion presented in Chapter Two of the statement describes dominant tree species and forest types and indicates that there is a trend toward reforestation due to the decline in farming.

The material used in this section was obtained from reports and other data provided by the various resource and regulatory agencies. Apparently, the more recent data were not available at the time this document was prepared. In any case, the updated information on forest areas, although useful, would not have any measurable effect on the outcome of the environmental impact analysis.

Comment PGC-28:

Refer to FWS-21

Comment PGC-29:

Table 2-391 (page 2-956) presents Pymatuning waterfowl data. Since the text fails to relate this material to the project area, and Pymatuning would not be impacted by this project, there is no significance to this material and no apparent reason for its inclusion.

Response PGC 29:

Pymat[illegible]ng is one of the two important inland wetland areas within the Principal Study Area. A comprehensive baseline description of the Principal Study Area was provided so that the reviewer would recognize that there is habitat in the vicinity of the Lakefront site that may be used by certain species displaced during plant construction and be able to evaluate the potential for direct or secondary adverse impacts. Data on the extensive waterfowl use of Pymatuning cannot be considered insignificant, since the Lakefront site is nearby, and some birds potentially displaced by the proposed activities may rest at Pymatuning during migration.

Comment PGC-30:

Beginning on page A-1, predraft E.I.S. coordination letters and responses are reproduced. None of the predraft correspondence from the Game Commission is included.

Response PGC-30:

Concerns raised by the Pennsylvania Game Commission, as well as other Federal, State, and local governmental agencies, have been addressed throughout the Final EIS. Copies of letters of coordination and responses are on file with the Corps of Engineers offices in Buffalo, NY, and Cleveland, OH, in addition to the public hearing files located at the Erie City and County Public Library, Erie, PA; and the Carnegie Public Library, Conneaut, OH.

Letters of coordination concerning the new pier proposal, intake structure, Turkey Creek mitigation plan, population projections, and other pertinent issues, are appended to this Final Environmental Statement.

Comment PGC-31:

The revised material for the final E.I.S. should be checked by the appropriate review agencies to insure the major shortcomings are overcome prior to the preparation of the final statement.

As soon as practicable, the Corps of Engineers should prepare a suitable vegetation map of the project area delineating the impacted areas. This map should be distributed to the appropriate review agencies.

Next, the Corps of Engineers, U. S. Fish and Wildlife Service, Pennsylvania Fish Commission, Game Commission and representatives of U. S. Steel and additional concerned review agencies should conduct a survey of the wildlife resources and impact effects on the project area. Such an evaluation should be made in accordance with current Fish and Wildlife procedures. This would provide an accurate assessment of these factors and develop interagency concurrence on the technology and results. Alternative proposals, plus mitigation and replacement lands should be included in this survey.

Response PGC-31:

The procedures recommended in the above comment were generally followed during the development of the fish and wildlife plan for the Lakefront plant site. A description of the various elements contained in this plan is presented in Chapters Two and Four of this Final Environmental Impact Statement.

Comment PHCOE-1:

"The discharge permit authority was transferred by the U. S. EPA to the State of Ohio which left the Army Corps of Engineers the only federal agency with a significant regulatory role. Does this authority end with granting the permits?"

Response PHCOE-1:

There appears to be some misunderstanding regarding the relationship between the discharge permit program and the Corps of Engineers regulatory process. The delegation of discharge permit authority was only used as a criterion for lead agency determination during the preparation of the Environmental Impact Statement. Assignment of this responsibility to the Corps of Engineers does not in any way expand the scope of our existing regulatory authority which is terminated when a permit is granted or denied, nor does it relieve the United States Steel Corporation of its responsibility to secure all of the necessary Federal, State, and local permits.

Comment PHCOE-2:

If the COE grants USS their permit, "who will assume the responsibility of watchdogging discharges and emissions from the U.S. Steel mill?"

Response PHCOE-2:

The responsibility for monitoring atmospheric emissions and chemical discharges from the proposed U. S. Steel Lakefront plant belongs primarily to those Federal and State agencies which have regulatory jurisdiction over plant operations. In the case of thermal and chemical discharges to Lake Erie, the Ohio Environmental Protection Agency is responsible for issuance of permits and monitoring and enforcement. The actions of the State are subject to review by the U. S. Environmental Protection Agency. Additionally, the State program must ensure compliance with all applicable Federal guidelines and regulations. Based on current permitting requirements, the discharge permit would require that a monitoring report be submitted to both the State and the USEPA. Additionally, the State of Ohio and the USEPA would make surveillance sampling on a programmed or necessity basis. Permits which require specific atmospheric emission limitations must be obtained from the USEPA prior to any plant construction. The EPA has full authority to enforce its permit conditions. Although each State has enforcement authority within its own boundaries, the USEPA can also take direct action when a State fails to require compliance with Air Pollution Control rules. If the Department of the Army permit is granted, it would authorize only the construction of those structures and work contained in the Department of the Army application. The Corps of Engineers does not have the authority to issue permits for operational aspects of the water intake or discharge or to control in any way the emission of pollutants to the atmosphere.

Comment PHCOE-3:

Another thing that nobody has touched on tonight that I would like to very briefly. I formerly belonged to the CIO Union, and every three years, it's a known fact, the big steel goes out on strike. Now, if we get the guts that the people in California did to have Proposition 12, 13 or 11, whatever you prefer. Pennsylvania is already working on 12. Now, if we can cut the taxes down, what are these people going to do when they're out on strike for anywhere from 50 to 100 days?

Response PHCOE-3:

During the 1960's the steel industry and the United Steel Worker Union entered into an experimental negotiating agreement. Since that time there have not been any steel plant strikes.

Comment PHCOE-4:

Refer to EPA-77

Comment PHCOE-5

Refer to OSC-5

Comment PHCOE-6:

"Mrs. Robertson, then the bottom line to your question is that the Corps of Engineers could only issue the permit if the Environmental Protection Agency gave assurances that the quantities would be within prescribed tolerances of existing laws?"

Response PHCOE-6:

The issuance of a Department of the Army (DA) permit for the work contained in the U.S. Steel Corporation's application would authorize only construction. The actual discharge of effluent or operation of the intake structure requires a valid National Pollutant Discharge Elimination System (NPDES) permit from the Ohio EPA after review by the USEPA. It is, therefore, feasible to issue DA permits prior to issuance of NPDES permits. The issuance of DA permits does not eliminate the need for the applicant to obtain all other permits required for the proposed facility.

Comment PHCOE-7:

"Under primary impacts, Item 2 states that salmonid stocking program for th watershed would be terminated, referring to Turkey Creek. They did not . salmon in Turkey Creek but in Conneaut Creek. Perhaps you might be - - this stud..ight mean on page 12 where it says the diversion channel which will carry the flow from the mill down into Conneaut Creek might eliminate salmon stocking in Conneaut Creek. Now, is this what this study meant, or doesn't it?"

Response PHCOE-7:

The Ohio Department of Natural Resources maintains salmonid stocking programs in both Turkey Cree.. and Conneaut Creek. Since the applicant no longer intends to fi..nd divert Turkey Creek, the State of Ohio, Department of Natural Resources woul..ably ..inue its present salmonid stocking program in this watershed.

Comment PHCOE-8:

"Discharges of cyanides, fibrillar sulfide and arsenic may require additional treatment of water. The effects of phenol and chlorophenols may require installation of expensive monitoring and treatment equipment in order to insure safe water supply to all the customers."

Response PHCOE-8:

The establishment of water quality criteria and standards takes into account a number of factors including protection of potable water supplies. Waste control technology employed at the Lakefront plant should sufficiently safeguard water quality since the major emphasis has been placed on the control of toxic wastes. The applicant must comply with all applicable standards and guidelines before the appropriate Federal, State, and local regulatory agencies would consider allowing the construction and operation of the proposed Lakefront plant.

The proposed discharge includes an 800-foot radius mixing zone. Considering the distance (greater than 22 miles) to the city of Erie's water system intake, the USEPA strongly doubts that any detectable impact would occur to the city of Erie's potable water quality.

The USEPA has further advised that the city is responsible for monitoring and treatment equipment installation under the Safe Drinking Water Act.

Comment PHCOE-9:

"The City would wish the responsible Government Agencies institute a program such as dye diffusion or water current studies to determine the possible effect of our raw water supply."

Response PHCOE-9:

Decisions regarding the need for additional studies to determine the possible effect on raw water supplies will occur during the NPDES permit process. The U. S. Steel Corporation must submit an application to the Ohio EPA, which is responsible for administering the NPDES program, at least 180 days before it proposes to discharge from this new source. Upon receipt of the permit application, it will be thoroughly evaluated and during this process additional information may be required. Failure of the applicant to submit the requested data could lead to denial of the permit application. Once a determination is made that the application is complete, a draft permit would be prepared and reviewed by Federal and State agencies as well as general public.

Protection of all potable water supplies is a major factor in establishing water quality criteria and these supplies should be adequately protected by the waste control technology to be required at the Lakefront Mill since major emphasis has been placed on control of toxic wastes. The applicant has been advised repeatedly that

permission to build and operate the proposed plant is contingent on compliance with all applicable regulations.

Comment PHCOE-10:

"Now, I'd like to ask members of U. S. Steel, if I read correctly in that proposal, not one iota of natural gas is going to be used in any of their buildings to heat, to do anything. Is that correct or is that not correct?"

Response PHCOE-10:

The proposed Lakefront plant's annual energy consumption will consist of about 600 X 10^{12} kcal (150 X 10^{12} Btu) from coal (including both coking coal and steam coal), about 1 X 10^{12} kcal (0.3 X 10^{12} Btu) from purchased fuel oil, and about 35 X 10^{12} kcal (8.8 X 10^{12} Btu) from purchased electricity. These amount to a total of 636 X 10^{12} Btu) per year. Natural gas will not be supplied to the proposed plant. Based on the plant's projected annual rate of finished steel production of 5.8 million tonnes (6.4 million tons), the average energy consumption is about 110 million kcal/tonne (25 million Btu/ton), including all pollution control energy.

Comment PHCOE-11:

Refer to AHC-3

Comment PHCOE-12:

Refer to DK-2

Comment PHCOE-13:

". . . Section 102, Subpart 2C, Failure to Recite the History of Success or Failure of Similar Projects."

Response PHCOE-13:

The proposed Lakefront steel plant represents an application of steelmaking technology not previously attempted in the United States. Although the individual process units planned for this facility have been used at various locations throughout the world, no single plant has integrated them to the extent proposed. Thus, there is no historic basis for the assessment of the success or failure of a project of this magnitude.

However, the comment refers to need for such an assessment and cites Section 102(2)C of the National Environmental Protection Act of 1969 as justification. Actually, this portion of the law deals only with the content of environmental impact statements and the methods of achieving interagency coordination at the Federal, State, and local level. It does not address the need for an assessment of past successes or failures.

Comment PHCOE-14:

". . . how can we be assured that the best available technology will not pollute?"

Response PHCOE-14:

Prior to reaching full production at the plant, the applicant will be required to submit discharge monitoring reports to both Ohio EPA and USEPA. From the data contained in these reports, the Ohio EPA and USEPA will be able to judge the performance of the treatment facilities and will be able to determine if the final effluent limitations are achievable when the plant attains production at design capacity.

There are several types of "Best Available Technology" definitions which pertain to effluents. These are all defined by the USEPA in accordance with various sections of the Clean Water Act. Section 301(b) of the Act requires achievement by not later than 1 July 1977 of effluent limitations for point sources which are based on application of Best Practicable Control Technology (BPT) currently available. By 1 July 1983, the achievement of effluent limitations based on Best Available Technology Economically Achievable (BATEA) is mandated by Section 301(b) of the Act. BATEA is intended to result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants.

The Administrator of the USEPA, after reviewing currently available technology and many other factors such as cost, energy, etc., determines the effluent limitations which can be achieved in each particular point source category based on use of best technology. The fact that a particular industry has not adopted pollution control devices which could be installed does not mean that the device is not available. The Administrator may review the results achieved by plants in other industries and determine if that technology, when transferred, is feasible, practicable, and will achieve the desired limitation. However, the Administrator does not prescribe the technology to be used, but rather sets the limitations which can be achieved if the best technology is employed.

Section 306 of the Clean Water Act requires the achievement, by new sources, of a Federal Standard of performance providing for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction achievable through Best Available Demonstrated Control Technology (BADCT), including where practicable a standard permitting no discharge of pollutants. BADCT determinations take into consideration factors such as cost, nonwater quality environmental impact, and energy requirements. BADCT determinations must consider technology whose present availability is demonstrated. This does not limit technology to that which is widely in use. It is sufficient if there is one operating facility which demonstrates that the level in question can be achieved or that there is sufficient information and data from relevant pilot plants as semiwork plants to provide needed economic and technical justification for such new source. New source standards may be properly based on a technology which has been demonstrated outside the industry, if that technology is transferrable. Again, the Administrator in promulgating national standards of performance for new sources, is not to prescribe technology which must be used, but is rather to set discharge levels which can be met if indicated technology is used. BPT and BATEA pertain to existing sources; BADCT is applicable to standards for new sources.

Comment PHCOE-15:

". . . why, if there's going to be a lot of permits being issued, why is it that these are the only sets of hearings? I'm wondering if there are going to be air standards that have to be met, why there aren't more permit hearings, public hearings, places to be addressed so that we can get more input and, also, get some other details?"

Response PHCOE-15:

To date, the Corps of Engineers is the only agency that has conducted public hearings on the proposed Lakefront steel plant. These sessions were held for the purpose of obtaining input on the work described in our notice of 11 March 1977 and to give the general public an opportunity to identify key environmental issues.

Other regulatory agencies responsible for the issuance of air quality or effluent discharge permits are required to provide an opportunity for public hearing during the review process. However, these agencies cannot make a determination regarding the need for hearings until such time as the U.S. Steel Corp. files the appropriate permit applications.

Air quality standards which must be met by the proposed Lakefront steel plant are defined in Chapters One and Four of this environmental impact statement.

Comment PHCOE-16:

Refer to AHC-1

Comment PHCOE-17:

Refer to A-4

Comment PHCOE-18:

Refer to A-17

Comment PHCOE-19:

". . . and a steel mill would be a strategic target, without a doubt. Are there any plans for defenses to protect us in the event of a war, and if so, what are they?"

Response PHCOE-19:

There are no plans to establish defense installation on the Lakefront site or in the general region surrounding the proposed facility.

Comment PHCOE-20:

"...I'd like to ask the U.S. Steel people if they think that it's in the interest of the public to build a steel mill in an area that has one of the highest rates of cancer in the United States?"

Response PHCOE-20:

Cancer data in the Regional Impact Area is collected by county units. Since only parts of Erie and Crawford Counties in Pennsylvania are within the defined Regional Impact Area, data is not available for the exact Regional Impact Area. Instead, data for the three counties in the impact area are presented below, both separately and as a three-county aggregate.

The national cancer rate is also presented, along with Statewide rates for Pennsylvania and Ohio. Comparisons between the three-county impact area and the States may be more meaningful than using the national average, because the impact area is generally more similar to the two States than to the nation as a whole.

All data presented applies to calendar year 1976, which is the latest information available.

Cancer Rates in the Impact Area, 1976

Place	Cancer Deaths,76	Population,76	Cancer Death Rate,76
Crawford, Co., PA	179*	85,700**	208.9 per 100,000***
Erie Co., PA	507*	275,000**	184.4 per 100,000***
Ashtabula Co., OH	207*	101,300**	204.3 per 100,000***
Three-Co. Aggregate	893***	462,000***	193.3 per 100,000***
Pennsylvania	24,025*	11,862,000**	202.5 per 100,000*
Ohio	19,302*	10,690,000**	180.6 per 100,000*
Two-State Aggregate	43,327***	22,552,000***	192.1 per 100,000***
United States	377,312*	214,659,400**	175.8 per 100,000*

Sources: *National Center for Health Statistics (NCHS), U.S. Department of Health, Education and Welfare. The term "cancer deaths" is used here for simplicity; the technical terminology employed by NCHS is "malignant neoplasms."

**U.S. Bureau of the Census, 1 July 1976 provisional population estimates, Series P-25, No. 739, November 1978.

***Calculations performed by Region III Federal Regional Council staff. The NCHS calculations of the 1976 cancer death rates for Pennsylvania, Ohio, and the United States are identical to the FRC staff calculations.

The most meaningful comparison appears to be between the three-county cancer death rate (193.3 per 100,000 in 1976) and the two-State cancer death rate (192.1 per 100,000 in 1976).

Corps staff is not qualified to judge whether this difference (1.2 per 100,000) is significant. Slight differences in data collection methodology may exist among different counties and States. Furthermore, cancer death rates are typically higher in urbanized areas than in rural regions.

Comment PHCOE-21:

Refer to CON-12

Comment PHCOE-22:

Refer to NAS-1

Comment PHCOE-23:

The short periods of time for all sampling by illogical weather, air temperature and et cetera, was inadequate.

Response PHCOE-23:

The use of several years of meteorological data complies with the USEPA guidelines for modeling impacts on the atmosphere and the time periods involved would adequately represent meteorological conditions at the Conneaut site. In addition, the methodology used in the analysis was reviewed and agreed upon by USEPA (Regions III and V), Pennsylvania DER, and Ohio EPA at the beginning of the study.

Comment PHCOE-24:

Refer to DW-31

Comment PHCOE-25:

Refer to DW-32

Comment PHCOE-26:

Refer to DW-33

Comment PHCOE-27:

Refer to CAM-4

Comment PHCOE-28:

Refer to CWP-6

Comment PHCOE-29:

Refer to DW-37

Comment PHCOE-30:

Refer to DW-38

Comment PHCOE-31:

Refer to DW-39

Comment PHCOE-32:

Refer to DW-40

Comment PHCOE-33:

Refer to A-11

Comment PHCOE-34:

U. S. Steel's misuse of their pollution control equipment is notorious among their suppliers. Fletcher Byrom, Board Chairman of Koppers Corporation, told me several years ago that he would not sell his coke ovens to U. S. Steel because he was afraid his ovens would get a bad reputation, given U. S. Steel's past abuse of Koppers' ovens.

Response PHCOE-34:

The comment is not accurate. Actually, the Koppers Company is willing and ready to sell their coke ovens to the applicant as well as other steel companies. Further clarification can be found in the copy of 12 September 1978 letter from Mr. Fletcher L. Byrom, Chairman of the Board of Koppers Co. Inc. to Mr. Larry Pintea, Editor for the Erie Morning News which follows this response.

Koppers Company Inc., Pittsburgh, PA 15219
Telephone: 412 227 2727

Fletcher L. Byrom
Chairman of the Board

KOPPERS

September 12, 1978

Mr. Larry Pintea, Editor
Erie Morning News
205 West 12th Street
Erie, PA 16501

Dear Mr. Pintea:

I understand that a Mr. David Dinsmore Comey wrote a letter to you and other representatives of the media on August 9, 1978 claiming that I told him several years ago that we would not sell our coke ovens to U.S. Steel because we were afraid our ovens would get a bad reputation, given U.S. Steel's past misuse of Koppers' ovens. I have no recollection of ever meeting Mr. Comey. However, if our paths did cross at any point, I'm afraid Mr. Comey somehow misunderstood whatever it was I may have said. We're in business to sell Koppers' coke ovens to steel companies - all steel companies. Let this be my assurance to Mr. Comey that if U.S. Steel were to favor us with an order for Koppers' coke ovens, we would most happily accommodate them.

Let me at the same time suggest to you - and peripherally to Mr. Comey - that fairness in this society suggests a presentation of all the facts and not just those that favor one view over another. I doubt that there is a single American corporation that has had a spotless environmental record. That is deplorable, of course, and as Mr. Comey knows full well, society is as much to blame as the corporations themselves. And while there is much yet to be accomplished, great strides have been made by most corporations in recent years, including U.S. Steel. Industry sources reflect huge expenditures by the steel industry as a whole, with U.S. Steel's expenditures alone reflecting something over a billion dollars in the last 20 years.

Any project the size of the proposed Conneaut facility is bound to bring out conflicting points of view. And while it is not my intent to take sides in the matter, I do present these facts in the interest of fairness.

Sincerely,

Fletcher L. Byrom

cc: James O. McDonald, Director of Enforcement, U.S. EPA, Region V
Robert Lundquist, Station Manager, WICU-TV
James DeSantis, WSEE-TV
Robert Sutherland, WJET-TV
David Dinsmore Comey

Comment PHCOE-35:

"What agreement or arrangements have been made or are contemplated with the State of Ohio to insure that Pennsylvania's interests are protected both in the construction and selection of treatment facilities, and more importantly, monitoring the operation between them?"

Response PHCOE-35:

The delegation of authority from the Federal Government (USEPA) to the State of Ohio relative to issuance of effluent discharge permits, does not relinquish the need for the State to analyze the impacts, insure installation of proper control devices, and monitor discharges in accordance with Federal standards and regulations. Permitting authorities must insure protection of water quality itself and the intended water uses, not just its own State interests. The Commonwealth of Pennsylvania would be given the opportunity to comment on the proposed effluent discharge permit.

In regard to atmospheric emissions, the applicant will be required to meet best available control technology in accordance with Federal Prevention of Significant Air Quality Deterioration (PSD) regulations and Lowest Achievable Emission Rate, possibly the most stringent restriction, in addition to national primary and secondary ambient air quality standards. The USEPA has full authority to enforce its air quality regulations as well as the air pollution control rules of both Ohio and Pennsylvania.

Comment PHCOE-36:

Refer to EPA-12

Comment PHCOE-37:

Refer to COM-9

Comment PHCOE-38:

". . . why (are) these discharge facilities. . . not placed in Pennsylvania?. . . How should these facilities be placed in Pennsylvania, that would alleviate the problem of seeing it stay within the state with respect to any future litigation."

Response PHCOE-38:

The applicant's location plans indicate that the discharge pipe is tentatively positioned at about mid-plant between the raw materials processing and the iron and steelmaking. The engineering logic is to have the water treatment discharge centrally located with respect to the sources of the discharging wastewater. Thus, the location is based on engineering judgment. Further, the designated placement would allow for efficient materials flow throughout the plant.

A delegated State has the lead role, subject to USEPA overview, in the drafting, public noticing and issuance of NPDES permits. It is the responsibility of the USEPA to review these processes and determine if the proposed permit is consistent with Federal regulations and policies, and any 208 plans and provides adequate opportunity for public comment. The impact on the waters of adjoining States must also be considered. The Regional review would result in a concurrence or a conditional concurrence (subject to specified revisions) being transmitted to the State. If a conditional concurrence is given, the State must notify the Region if it does not intend to comply with any permit changes or additions requested. Upon receipt of notification not to comply, USEPA could formally object to the issuance of the permit. The State is prohibited from issuing a permit if USEPA objects. Should such an objection occur, the USEPA has the authority to issue a Federal permit in place of the objectionable State permit. Corps staff does not believe it will be necessary for the USEPA to invoke this authority. However, this information is provided to illustrate that the NPDES process contains certain safeguards to protect the quality of water in adjacent States.

Although both Ohio and Pennsylvania Lake Erie water quality standards are presently undergoing revision, both sets of criteria are based upon high quality water use classifications. For most parameters, the controlling use classification is Exceptional Warm Water Habitat (Ohio), and Cold Water Fish (Pennsylvania). The Ohio Standards tend to be more stringent in this case. Any NPDES permit issued, must be conditioned for compliance with water quality standards.

Comment PHS-1:

In Chapter 4, Working Paper VI, the projected health requirements for acute and chronic health services delivery are discussed. The projected needs in the communities of public health or preventive medical services are not presented.

Chapter 4, Working Paper X notes that the average county public health workers per 1,000 population in Ohio is 65 percent of the national average. Projected needs are not discussed.

Response PHS-1:

The working paper on health care (VI) includes broad estimates of requirements for health care facilities and personnel provided primarily by the private sector. Its purpose is to assess the impacts of new population on the existing system and structure. Public health functions provided at the county and city level are considered to be included in requirements for general government functions. The working paper does not attempt to address specific health care functions (e.g., physicians required by specialty or requirements for health-related agencies such as Planned Parenthood). These considerations would be part of a comprehensive health planning study combining baseline and impact population requirements which are beyond the scope of this impact analysis.

Table 4 of Working Paper X (General Government) shows averages for all counties in Ohio, Pennsylvania, and the United States for four categories of general government employment, including "public health." However, the analysis did not extend to the details of specific functions which were included in the public health category for either State or the nation as a whole. Levels and types of services provided by agencies of State, county, and municipal Governments vary significantly from State to State. More importantly, no comparison was made between public health services performed by the study area counties and State or national average service levels. Any projection of specific public health requirements in the context of this working paper would have to be based on data of this type.

Further, if it were deemed desirable to provide county public health services at the national average level of 0.28 employees per 1,000 population, Erie and Ashtabula counties would each need only one additional county public health employee by 1990 to serve the new resident population.

Comment RB-1, RB-2:

I therefore question the logic of allowing U. S. Steel to dump a minimum of approximately 180 tons of waste into the lake each day. The effects of such dumping over a period of five years is not accurately predictable, leaving serious questions as to the extent of these affects over a long period of time, say 50 years. This assumes that the plants treatment facilities are as affective as the company claims and that they will not deteriorate and allow a greater amount of pollutants to flow into the lake. The company's past record makes me very skeptical of their future performance.

Response RB-1, RB-2:

The water quality standards and effluent limitations were promulgated in accordance with the Clean Water Act for the explicit purpose of protecting the quality of waters in the nation. Before U. S. Steel Corporation can discharge to Lake Erie, they must obtain a National Pollutant Discharge Elimination System (NPDES) permit. This permit will stipulate limitations in mass amounts for the heavy metals, organics, and other metal elements that they will be permitted to discharge. The limitations will insure that concentrations of toxic chemicals in amounts harmful to the public health and welfare, and to aquatic organisms do not occur. Disruption of aquatic life, adverse public health effects, or damage to any legitimate use of the waters is a violation of the general provisions found in most water quality standards and direct action can be taken to eliminate the violation. The long-term effects on water quality, human health, and aquatic life are predicted in the sections of Chapter Four pertaining to water quality impacts and impacts on the aquatic ecosystem. These sections discuss long-term effects based on the currently available information.

Comment RB-3:

Refer to DW-2

Comment RB-4:

Refer to MM-2

Comment RB-5:

The formation of ice dunes along the lake shore, including the shores of Presque Isle, are instrumental in preventing substantial erosion of the shoreline during the severe storms which occur yearly during the long winter months. As a summer employee of Presque Isle State Park, I am well aware of the large sums of money spent on erosion control projects at the park each year by the taxpaying public through Federal agencies like the Army Corps of Engineers. Additional erosion resulting from construction of the proposed mill and resulting secondary development will seriously and negetively affect Presque Isle and the entire Pennsylvania shore line. The cost of slowing this erosion will fall directly on the taxpayers and not on the firm whose plant is directly responsible for the problem, with lakefront homeowners facing the most serious problems.

Response RB-5:

Ice formation along the shoreline of Lake Erie does aid in preventing erosion. However, since U. S. Steel's proposed outfall diffuser is located 1,615 meters (5,300 feet) off the lake shore, the discharge should have a negligible impact on shoreline ice formation. Since the proposed pier modifications would be contained within the

Conneaut Harbor breakwaters and the pipelines for the main water intake and wastewater outfall would be buried under the lake bottom, these structures would not interfere with littoral drift. The proposed plant will not affect regional lake shore erosion patterns and no impact on Presque Isle erosion rates should occur.

Comment RB-6:

Refer to A-9

Comment RB-7:

Refer to A-11

Comment RB-8:

Refer to ADM-1

Comment RB-9:

Refer to A-4

Comment RJM-1:

Refer to CAM-4

Comment RK-1:

Refer to DOC-12

Comment RK-2:

Another concern of mine is the method U. S. Steel will use to evaluate its effects on the environment. Again I quote from section 13 statement #8. "Sulfur dioxide and the various oxides produced by the Lakefront facility could react synergistically to cause damage to sensitive agriculture crops, nursery stock, and natural vegetation at lower concentrations than would otherwise occur on an individual basis. Available data are not sufficient to predict the actual impact plant emissions would have on area vegetation or wildlife. The applicant has agreed to initiate a monitoring program to identify and define the effects on vegetation."

Data is not available, if the effects are negative what will we do then? Can we afford to gamble with nature, haven't we destroyed enough of our environment through exploitation? The purpose of the E.I.S. is to know what is going to happen, doesn't U.S. Steel contradict its intent?

Response RK-2:

The USEPA, not the applicant, will determine whether or not the proposed facility will meet standards which were set up to protect the public health and welfare. If this agency determines during its Prevention of Significant Air Quality Deterioration review that there is a likelihood of adverse effects on vegetation, especially the commercial value of crops, they can require further evaluation prior to any construction. At the present time, the state-of-the-art on synergistic effects is still too rudimentary to accurately establish impacts.

If at the time the U. S. Steel Corporation submits their PSD application to the USEPA, additional analyses are deemed necessary, the applicant would be required to perform such studies using current state-of-the-art procedures. Any failure to comply with permit or regulatory requirements can be followed immediately by the commencement of administrative enforcement action by the USEPA. If compliance does not result, judicial action will follow.

Comment RK-3:

Refer to A-4

Comment RM-1:

Refer to RM-2

Comment RW-2:

Refer to GG-1

Comment RW-3:

Refer to A-7

Comment RW-4:

Refer to CPA-3

Comment RW-5:

Refer to RW-4

Comment RW-6:

Refer to RW-4

Comment RW-7:

Refer to MWP-5

Comment RW-8:

It only follows that with an increase in population and welfare, increase in incidents of crime follows. The need for more police protection would exist.

Response RW-8:

Arguments exist to support both an increase and a decrease in the number of welfare recipients resulting from the proposed U. S. Steel plant. More to the point, there is no way to predict what effect an increase or decrease in the number or percent of welfare cases might have on the number or rate of crimes committed, although it is, of course, possible to find examples to support almost any position. What can be demonstrated from available data is a relationship between law enforcement requirements and community population: as population increases, police requirements (expressed as police personnel per 1,000 population) increase. This relationship was described in Working Papers VII which was appended to the draft Environmental Statement.

Comment RW-9:

Refer to CWP-9

Comment RW-10:

Pefer to JB-3

Comment RW-11:

Conservation of Energy, should this lakefront facility be completed, there would be substantial increase in the need for natural gas and electricity. By 1990 total electric consumption according to the EIS will reach 61 million kWh, gas consumption 520 million cubic feet, and distillate oil will reach 26,000 barrels. All this in a time of declining energy supply. Only two winters ago, we lived in fear that our natural gas supply would not last through the winter. Where will we get all the extra supply of natural gas for all the additional people?

Response RW-11:

Energy supplies needed for new residents of the study area must be viewed in relation to the capability of the utility systems to meet this increased demand. In all cases, the plant-related population and associated commercial and industrial activity is expected to increase demand by less than one-half of one percent.

For example, U.S. Steel-related secondary electricity demand in the Cleveland Electric Illuminating Company (CEI) service area is, as noted, expected to be 61 million kWh by 1990. However, this represents less than 0.2 percent of total system demand of more

than 36 billion kWh. Alternatively, it requires seven mw of generating capacity to produce 61 million kWh of electricity. The CEI system is projected to have a production of 6,700 mw by 1988 while the average demand is expected to be about 3,400 mw.

The natural gas shortage of the winter of 1976-77 resulted from a combination of supply curtailments and extremely cold weather. Consolidated Natural Gas Company, the parent of East Ohio Gas, had a system-wide supply of about 800 billion cubic feet (bcf) in 1976, down from about 850 bcf in 1974. The company projects that new sources will increase supply to more than 850 bcf by 1981. Therefore, the supply side of the natural gas supply/demand equation is expected to increase. Demand created by plant-related new population in the Ohio portion of the study area is expected to be about 520 million cubic feet in 1990, less than 0.1 percent of total East Ohio Gas Company demand of more than 520 billion cubic feet. The Lakefront plant will require no external sources of natural gas.

Further, recent federal energy legislation calls for the gradual deregulation of interstate gas. Under these circumstances the available supplies of gas for residential and industrial consumers are expected to increase over time.

Comment RW-12:

Gasoline shortages seem to crop up at least once every summer. Where is all the extra gasoline coming from that will power the automobiles and other transportation for the plant workers, not even to mention the cancer causing hydrocarbons they will emit.

Response RW-12:

Gasoline requirements to provide transportation for plant workers and their families were not explicitly projected as part of the environmental assessment process. Nonetheless, by 1990 the applicant believes that total employment in the Regional Study Area could increase by six percent over baseline conditions, causing an increase in total population by three percent. Utilizing these projections, it can be assumed that total gasoline demand increases would be approximately three-six percent. This added demand in itself would not be great enough to cause any localized gasoline shortages.

Comment SAE-1:

Refer to EDH-38

Comment SAE-2:

Refer to GG-4

Comment SAE-3:

Refer to GG-4

Comment SAE-4:

Refer to EDH-38

Comment SAE-5:

Refer to GG-4

Comment SAE-6:

Refer to CRG-43

Comment SAE-7:

Refer to CRG-43

Comment SAE-8:

Refer to AHC-1

Comment SAE-9:

Refer to AHC-1

Comment SAE-10:

(G). I was not able to adequately review the data presented in Table 4-323, p. 4-751,2 and Table 4-324, p. 4-758,9 since some of the references listed (as corrected by your staff from those listed on pgs. 4-874-7) are incomplete. I have been unable to locate references 4-130 (Yopp, J. H. et. al) and 4-138 (Hindawi, I. J.) from the information supplied in the corrected reference list.

Response SAE-10:

The complete citations for both references are presented below:

(1) Hindawi, I. J., "Air Pollution Injury to Vegetation." Report No. AP-17. National Air Pollution Control Administration Technical Center, Durham, NC. 1970:49 pages.

(2) Yopp, J. H., W. E. Schmid, and P. W. Holst, "Determination of Maximum Permissible Levels of Selected Chemicals that : Toxic Effects on Plants of Economic Importance in Illinois." Report No. II EQ-74-33. Illinois Institute for Environmental Quality, Southern Illinois University, Carbondale, IL. August 1974:269 pages.

Copies of these documents are available for review at the Corps of Engineers, Buffalo District Office.

Comment SAE-11:

Refer to KEE-8

Comment SST-1:

Refer to CWP-5

Comment SST-2:

Refer to CRG-39

Comment SST-3:

We notice that the E.I.S. has not addressed the impact on agriculture in that area. The omissions from the E.I.S. could be very detrimental to the agriculture community. More money comes to that area from agriculture than will come from what is now proposed from the steel mill. The E.I.S. ignores this fact completly.

Comment MJB-4:

The EIS mentions that the revenues generated by the mill will offset the costs of their response to the effects. However, is it not true that the agricultural community in the general area generates more revenue than the proposed mill is predicted to generate?

Response SST-3, MJB-4:

Due to the numbers and levels of economic interrelationships involved, a complete comparison of the revenues generated by the "agricultural community" and the proposed mill is not possible from available information. However, an examination of two of the most obvious contributions to tax revenues, property valuations and payroll, indicates that the U. S. Steel Plant would generate several times more revenue than agriculture.

The assessed valuation of agricultural real estate in all of Ashtabula County in 1975 was $66 million. By 1990, the Ohio portion of the Lakefront plant would be assessed at $175 million. The value of agricultural real estate in the Pennsylvania Coastal Communities in 1975 was eight million dollars. By 1990, the assessed valuation of the U. S. Steel property in Pennsylvania would be $25 million. In 1990, direct payroll generated by U. S. Steel is estimated at $136 million. In the same year, total payrolls generated by agriculture are estimated at $22 million.

The above examples do not consider such issues as indirect and induced industries and payrolls, corporate and proprietors' income, and other contributors to tax revenues. However, it appears that there is little justification for assuming a larger tax contribution from agriculture than from the proposed Lakefront plant.

Comment SST-4:

Refer to JB-6

Comment STP-1:

Refer to COM-1

Comment STP-2:

Refer to EPA-12

Comment STP-3:

An additional concern is that the National Pollution Discharge Elimination System (NPDES) permit required for the U. S. Steel facility is the responsibility of the Ohio Department of Natural Resources. Because this discharge will be in the prevailing flow direction relatively close to any water intake for Springfield Township we are requesting that this permit be either a joint effort of the Ohio Department of Natural Resources and the Pennsylvania Department of Environmental Resources or the responsibility of a federal agency more responsive to Pennsylvania based objections than an agency solely responsible for the State of Ohio.

Response STP-3:

The issuance of discharge permits by an authorized State agency such as the Ohio Environmental Protection Agency must be in accordance with Federal standards. The Federal standards are not specific to an individual state but are based largely on the intended use of the receiving water body. Therefore, discharge permits must consider the use of Lake Erie as a drinking water source and must comply with all applicable provisions of the Clean Water Act including standards of performance for new sources, data collection, reporting, monitoring, and inspection. The Ohio EPA has sought and received approval to administer the NPDES program. Decisions regarding the NPDES permit for the proposed facility will be made by the Ohio EPA, subject to review by the USEPA.

Comment STP-4:

4. Transportation

The existing network of roads throughout Springfield Township and East Springfield Borough is presently adequate for the present traffic conditions. However, with the implementation of development much thought will need to be given to developing a transportation plan which will allow a smooth traffic flow through the communities. We shall also expect that a comprehensive plan for construction traffic will be submitted to the appropriate officials so that disruption of normal activities may be minimized during the construction period.

Response STP-4:

Alternative access and egress routes for the proposed Lakefront plant as discussed in the Draft Environmental Impact Statement (DEIS) are only conceptual at this time. Since the plant design has not been finalized, specific rights-of-way and detailed engineering plans are not available. The reviewer should be cognizant of the fact that it is the responsibility of the Federal and State Transportation Departments to develop a transportation plan and to assess the environmental impacts relative to highway construction.

Comment STP-5:

Refer to ADM-3

Comment STP-6:

Refer to CRG-39

Comment TM-1:

Refer to DW-38

Comment TU-1:

You should consider all of the secondary environmental implications of this proposal including regulation of air quality, land use changes, and water quality. However, on page 6-2 of volume 4 disclaimers are stated that might allow you to avoid that responsibility.

The inclusion of these disclaimers in the DEIS indicate a weakness in the permit system, itself, and in all volumes of the DEIS. It is a weak document that does not fully consider all possible damages to citizens, Lake Erie, and the shoreline.

The descriptions of Lake Erie aquatic life and of the impact upon the lake are particularly inadequate.

Response TU-1:

Although air quality regulation, secondary development, land use changes, and water quality associated with point source discharges were considered and discussed in the Draft Environmental Impact Statement (DEIS), U. S. Congress has not given the Corps of Engineers the legal authority to regulate these activities. Instead regulatory authority for the above has been delegated to various other Federal, State, and local governmental agencies.

Due to the magnitude of the project and the number and complexity of the regulatory requirements to be met, an intergovernmental technical team was established prior to preparation of the DEIS. The technical team identified and defined all Federal, State, and local requirements that had to be met by the applicant; reviewed proposals for the collection of field data and participated in onsite sampling surveys; identified critical areas where the environmental impact of the project was expected to have the greatest effect; and recommended courses of action which would tend to offset or mitigate environmental impact. Experts participating on the technical team represented the U. S. Fish and Wildlife Service, U. S. Environmental Protection Agency, Corps of Engineers, Ohio Environmental Protection Agency, National Marine Fisheries Service, Federal Regional Council and the counterpart agencies in Pennsylvania and Ohio.

Comment TU-2:

Refer to ADM-6

Comment TU-3:

In addition to disruption from dredging, pier design will cause the following water quality problems:

a. Reduced and altered circulation of water.

b. Increased silting.

c. Entry of other pollutants.

Response TU-3:

A new design for the proposed pier extension and dock is discussed in this Final EIS. This design would allow free water circulation and would occupy less bottom habitat than the original plan. Therefore, it is not expected to significantly alter siltation patterns in Conneaut Harbor.

In regard to dredging impacts it is acknowledged that temporary increases of dissolved and suspended solids would occur within the water column. However, periodic dredging would also aid in permanently removing polluted materials that would otherwise tend to accumulate in the heavily travelled commercial lanes. This, in turn, helps to ameliorate adverse effects of bottom perturbations caused by navigation activities (i.e. propeller movement, anchor drag, bottom eddies,).

The effects on water quality due to accidental spills and increased shipping and harbor activity could be minimized if appropriate management practices are adhered to. The applicant has assured compliance with all appropriate regulations as they apply to harbor and shipping activities.

Comment TU-4:

Refer to EPA-146

Comment TU-5:

Refer to FWS-10

Comment TU-6:

Refer to FWS-27

Comment TU-7:

Refer to CON-10

Comment TU-8:

Refer to FWS-44

Comment TU-9:

10. The applicant, apparently, admits to violation of Federal Law in the DEIS. Cf. paragraph 2.481, page 2-620; paragraph 2.889, page 118; paragraph 2.917, page 1218 and paragraph 4.692, page 4.781. However, the document fails to say that several hundred feet of Turkey Creek were put into a culvert and covered with fill. Nevertheless, reference is made to "- - -recent clearing and grading operations." The U. S. Fish and Wildlife Service has said that "This stream channelization was done without proper authorization from the Corps; and no enforcement action has been taken against the U.S. Steel subsidiary despite the apparent violation of Federal law."

Response TU-9:

Corps of Engineers regulations published on 25 July 1975, established a headwaters limit for each river and stream identified as a water of the United States. Specifically, this limit was defined as the point on a nontidal stream above which the average annual flow is less than five cubic feet per second. On 19 July 1977, these regulations were revised and again published in the Federal Register. Under the new procedures, certain discharges were authorized by nationwide permit, thereby, eliminating the need to submit a formal permit application or process it in accordance with conventional procedures. For example, activities involving the placement of dredged and fill material in waters above the headwaters limit and their adjacent wetlands are specifically included in the nationwide permit authorization.

The work referred to in the above comment involves the construction of a railroad yard parallel to and immediately north of the Conrail tracks just east of Conneaut Creek. During construction, a total of six tributaries were culverted and backfilled by construction contractors working for the Bessemer and Lake Erie Railroad. Four of these empty into Turkey Creek, while the other two are tributary to Conneaut Creek. Subsequent investigations by the Corps staff revealed that the average annual flow of all tributaries was found to be less than five cubic feet per second. Thus, the work performed in these water courses was above the headwaters limit and authorized by nationwide permit.

In summary, the placement of culverts in each of these tributaries does not constitute a violation of Section 404 of the Clean Water Act. On 29 September 1978, both the Pennsylvania Game Commission and the U. S. Fish and Wildlife Service were advised of this determination in writing.

Comment TU-10:

Refer to SW-9

Comment TU-11:

Refer to FWS-60

Comment TU-12:

Refer to DA-1

Comment TU-13:

Refer to DA-1

Comment TU-14:

Refer to DA-1

Comment TU-15:

Paragraph 1.349, page 1-274, describes the fill and diversion of Turkey Creek. Despite the fill and diversion, there will still be a natural channel or drainage flow in that area. Into this area of natural flow, the applicant proposes to dump solid wastes. Leaching from the wastes into Lake Erie is inevitable. These wastes are to be generated during operation. The applicant, if allowed to fill and drain, should not dump anything into the area, and there are no controls restricting the contaminating nature of the fill.

Response TU-15:

In response to the comment received during the review of the draft EIS, the applicant has abandoned the proposal to fill and divert Turkey Creek. Instead, this water course would be left in its natural state except for a section between State Line Road and a point 1,500 feet above Lake Erie which would be placed in a culvert. In accordance with this revised proposal, solid waste would not be placed in the Turkey Creek ravine.

Comment TU-16:

17. Diversion of Turkey Creek is discussed in two places in the document. 1.349 and 5.106. But the applicant does not discuss the following adverse effects arising from most stream relocations;

a) Loss of stream length.

b) Increase in velocity.

c) Long culverts do not work as stream relocators because fish swimming within them can't develop sustained speed. This would inhibit immigration of migratory salmonids.

Response TU-16:

In response to comments made by agencies and the general public, the applicant has rejected the original proposal to fill and divert Turkey Creek and has adopted a new plan which calls for culverting a portion of the stream and eliminating the diversion channel. Under the new plan, Turkey Creek would be culverted between State Line Road and a point approximately 460 meters (1,500 feet) upstream from Lake Erie. Approximately 2,286 meters (7,500 feet) of winding streambed would be straightened to allow for the installation of a culvert 1,707 meters (5,600 feet) in length with an inside diameter of 3.66 meters (12 feet).

The length of the proposed culvert coupled with the absence of pools and protected areas could deter upstream migrations of Lake Erie salmonids. To overcome this problem, the applicant proposes to install a system of baffles and resting pools and a skylight system which would provide subdued lighting along the entire length of the culvert. In an effort to further encourage salmonid migration, the applicant also proposes to augment low flow rates during peak migration periods by diverting a portion of the plant intake water into the upstream end of the culvert.

The applicant has agreed to provide stream habitat improvements for salmonids in the lower 460 meters (1,500 feet) of Turkey Creek below the proposed culvert. In conjunction with this habitat improvement program, the applicant would permit fishermen access by boat to the mouth of Turkey Creek and the adjoining beach area.

Comment TU-17:

Refer to PGC-18

Comment TU-18:

Refer to OEPA-16

Comment TVA-1:

On page II-60, you quote from my paper on page 6 (not page 6 as in the footnote) about the general range of mover rates, apparently to support the mover rates found in your study. The quote is taken out of context. The preceding sentence in the paper states, "It appears that the projects surveyed provide a reasonable range of construction characteristics to set limits of the percentage of movers estimated for a new project of similar scale." The last phrase "of similar scale" is the key for the whole paper, which is oriented toward power plant projects with peak employments in the 2,000 to 3,000 range --not the 10,000-person range. As noted in the footnote, the EIS for the Hartsville Nuclear Plant project, with a projected peak employment of 5,000, projected the number of inmoving employees to be 2,700 or 54 percent. I suggest either deletion of the citation or adding to the footnote the context in which the quoted statement was made, i.e., for projects in the 2,000 to 3,000 peak employment range.

Response TVA-1:

The comment is acknowledged. Reviewers are advised that the footnote on page II-60 of Working Paper II, appended to the Draft EIS, should be changed to read as follows.

* Construction Employee Monitoring, The TVA Experience, George DeVeny, 1976, p. 6. However, in an interview DeVeny asserted that 50 percent inmigrants were normally encountered for projects in the 2,000 to 3,000 peak employment range. In the EIS for the Hartsville project (with a projected peak employment of 5,000) the range is described as being between 50 percent and 75 percent depending upon the stage of the project in terms of peak activity.

** Technology Review, January 1977, p. 12

Comment TVA-2:

On page II-75, there is another quote from my paper; but it is from page 7 rather than page 11. Since you added two parenthetical notes which were not in the paper, I suggest you paraphrase the statement or delete the parentheticals from the quotation. As you know, the family status split from TVA's surveys is between those employees with families and those employees without families. Those employees without families include what your study calls weeklies but also includes employees who are single for another reason -- never married, divorced, widowed, or separated. Of course, these employees very likely stay in the area once they move there rather than leaving the area every weekend.

Response TVA-2:

The comment is acknowledged. Reviewers are advised that page II-75 of Working Paper II, appended to the Draft EIS, should be modified to eliminate the parenthetical statement referred to in the above comment. The page number of this citation should also be changed from p. 7 to p. 11.

Comment TVA-3:

On page II-76 in the footnote, you note that "the TVA experience shows a very heavy bias toward broader car pooling (3 to 4 workers per car)" and go on to mention the Hartsville employee transpotation program. This is in apparent support for your choice of 2.5 workers per car for the transportation impact analysis. It is only at Hartsville that the average rider per vehicle is about 4. This includes the vans and buses in the employee transportation program. To achieve this average ridership level has required a subsidy of about 30 percent of the total cost of the operation of the vans and buses. At other projects where no program is in effect, the average worker per car is in the range of 1.7. This situation needs to be clarified or the reference to TVA dropped.

Response TVA-3:

The comment is acknowledged. Reviewers are advised that the footnote on page II-76 of Working Paper II, appended to the Draft EIS, should be changed to read as follows:

> * At the Calvert Cliffs project in rural Maryland, 1,500 workers on a shift amounted to almost 1,200 vehicles (1.25 workers per automobile). In North Dakota surveys only one-half of all workers involved in energy-related construction projects commuted to the sites by car pool. The TVA experience shows increased car pooling (three to four workers per car), when there is a comprehensive van pooling program. At projects where no program is in effect, the average worker per car is in the range of 1.7. Our interviews with both management and union personnel served to reaffirm car pooling. (Refer to Section II-b (Residential Choice) for a further discussion of projections regarding number of workers per car.)

Comment TVA-4:

On page II-70 in the footnote, you mention the use of the union local address as the location for its entire membership and mention that TVA uses a similar methodology. Since the source for that statement is not cited, I was not able to verify it. While the methodology may be used for regionwide studies, I'm sure it is not used for county estimates because many locals have jurisdiction covering extremely large areas. For example, a Nashville local would have jurisdiction for our Hartsville project 50 miles east and for a construction project at our Cumberland Steam Plant 50 miles northwest. To assume the local's total membership is all located in Nashville for both projects clearly would be inappropriate. I am not aware of any TVA analysis aimed at estimating the population influx due to a project which uses the methodology you outlined. This includes both TVA studies and those done for TVA projects by outside, independent consultants. There are several alternate and reasonable methodologies. I would suggest deleting the reference to TVA in the footnote.

Response TVA-4:

The comment is acknowledged. Reviewers are advised that the footnote on Page II-70 of Working Paper II should be changed to read as follows:

> * Since it was impossible to compile addresses of the entire work pool, place of original residence was considered to be the location of the local union office with which the workers were affiliated. This is a simplistic assumption since members of a union also live in suburbs and nearby towns, but there was no more appropriate procedure available.

Comment TVA-5:

On page II-87 in the second footnote, I suggest you let the reader decide whether Gallatin and Lebanon are "only" slightly larger than Hartsville. Both Lebanon and Gallatin are about 13,000 to 14,000 in population while Hartsville is about 2,200. Towns the size of Lebanon and Gallatin offer many attractive features not found in a town the size of Hartsville. In addition, they are both located about halfway between the Hartvsville project and Nashville.

Response TVA-5:

The comment is acknowledged. Reviewers are advised that the footnote on page II-87 of Working Paper II should be changed to read as follows:

> ** A smaller town (Hartsville - population approximately 2,200 about six miles from the site had only 19 percent of all "movers" as opposed to 62 percent of the "movers" who chose the two more distant and larger towns of Gallatin and Lebanon (population 13,000 and 14,000, respectively).

Comment TVA-6:

The paper is extremely complete in its presentation of assumptions and methodology. This enables the reader to easily check the results or recalculate new results using other assumptions. However, there is one omission in the paper which must be an oversight. That is the methodology for the mover-weekly split. Beginning on page II-62, the data are simply presented with no explanation as to how they were calculated. It would make the paper more complete were this methodology added.

Response TVA-6:

The methodology for estimating the mover-weekly split is analogous to that used for estimating the number of commuters available for the project. The principal assumption, discussed on pp. II-62 through II-74 of Working Paper II, is that workers residing 100-400 miles from the project site would be weeklies, while those living further than 400 miles would become movers. The residence of workers was based on the location of the union local, as cited above. As for commuters, estimates of weeklies available in 1979-80 are based on union membership, unemployment, and planned and/or potential labor-competitive projects. The estimates of weeklies were framed on the conservative side to allow for the maximum potential negative impact upon the study area. That is, the estimates were biased toward movers rather than weeklies because of the greater socioeconomic impact movers would be likely to have on the local community.

Comment WJB-1:

The EIS completely ignores the impact of population and housing growth in Crawford County and specifically in South Shenango Township.

Any development in the 50 mile radius of the proposed steel plant must be in areas serviced by municipal sewer sysems because the soils in the area are not suitable for on-lot sewage effluent disposal. The North and South Chenango Joint Municipal Authority is one of two systems in the area that are capable of accepting growth. These are the areas that will suffer immediate impact and they are not even mentioned in the statement.

Response WJB-1:

Although South Shenango Township is a part of the Principal Study Area, it is outside of the 35-mile radius within which most new residents are expected to settle. Furthermore, for the reasons presented in the population sections of Chapter 4 of this statement and Working Paper III (Operations), which was appended to the DEIS, it is expected that most new development will occur in the lakefront communities north of I-90. The report entitled, "U.S. Steel's Proposed Plant Complex at Conneaut, Ohio and Its Planning Challenge to Crawford County" that was prepared by the Crawford County Planning Commission in June 1977 (which assumed a new population of almost 100,000 rather than the 16,000 projected by the applicant's consultant) stated that even with the development of an extensive sewerage system, any impacts in North, South, and West Shenango "may be later and may be more of the 'second home' variety." For these reasons, it is believed that potential impacts in South Shenango Township would be neither immediate nor significant.

Comment WJB-2:

Refer to CWP-6

Comment WJB-3:

Refer to DW-38

Comment WJB-4:

Refer to SST-3

Comment WJB-5:

Refer to CRG-43

APPENDIX "A"

Letters of Comment Received During

the Review of the Draft E.I.S.

August 28, 1978

Colonel Daniel Ludwig
District Engineer
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Re: Environmental Impact Statement
for Proposed U.S. Steel Facilities
and Modification of Conneaut Harbor.

Dear Colonel Ludwig:

In response to the hearing of August 22, 1978, I would like to request that the record incorporate the following comments or questions.

Issues of concern. It seems that much of the energy of these hearings has been focused on the issue of Turkey Creek. As one of two cold water streams in this region and one of few Lake Erie streams with natural outlets, it is a significant issue. However, it is by no means the most important issue.

The energy-economic and human cost factors required to relocate the applicant from its current mill towns (see footnote No. 1, Page 13), the loss of water and agricultural industry as a result of such a relocation, and the two most important foodstuffs of man--the air we breathe and the water we drink--are the primary issues of these hearings.

The importance of the decision ahead should not be weighed in magnitude of time. This project--should it be approved--would affect not only citizens of Conneaut, West Springfield, Erie, and for that matter those of Youngstown, Pittsburgh or the more than ten million persons who live in the Lake Erie basin--in reality, the magnitude is such that it would affect the very policies of our country that underlie its approaches to urban decline and job redistribution. This matter was brought adequately to our attention in the hearing at Erie. Are we, as a nation, to continue to permit urban-industrial sprawl into rural agricultural areas? Are we to continue the degradation of valuable resources such as the Lake Erie water basin--or will we adhere to policy with foresight concerning the future health of this nation; logic dictates that containment

of major industry to sites predetermined for industry is a necessity of our time--sites with pre-existing infrastructure (i.e., with schools, hospitals, necessary disposal treatment facilities, major roadways, etc.) which has already been generated by the forebearers and the current generations of persons who have chosen to follow the industrial ways of the metal industries.

Not all growth should be considered synonymous with progress--at least not just any growth. In the biological world growth which occurs without a social responsibility to the environment of cells within a tissue is a property of cancer. When cancer cells invade a tissue which has a totally different set of responsible functions for the body, the growth of the cancer cells gradually drains the sustenance, crowds out and destroys the essential cells of that tissue. The consequence of this is usually the eventual destruction of the entire being.

A-1 To permit a major steel mill with all its accessory industry to grow along the shores of Lake Erie in this natural and agricultural setting would transform this special region into another major industrial center. It would drain the people of Pennsylvania and Ohio of sustenance in the form of energies, monies and efforts required to build the infrastructure to support this massive development; and, most importantly, it would crowd out and cause substantial loss in what today is probably one of the most important resources of this country, the resource to produce food.

The competitive capabilities of the agriculture industry far outstrips that of our world neighbors. In this sense it is a national asset which grossly exceeds that of our steel producing facilities. For some time now it has been apparent that the world can do without our steel--the world cannot always do without our food. The ability of this nation to stay in front in this very important market for export should not be taken for granted. It is an asset that should neither be bartered away to foreign nationals for profit nor exploited and lost for the simple expediency of industrial cause. It has not been the history of this country to take the easy road--to abandon our cities and our cities' industrial and environmental problems simply because it is more expedient to move to "greenfield" areas is not this nation's way. The American way is to define our problems and to deal with them in a manner which exploits neither country, people, or industries.

A-2 To come now to certain points. This DEIS is grossly lacking with respect to (a) substance in the matters of secondary impact

upon the important resources of this region such as the dairy and agricultural industries; and, (b) the economic and energy costs of transferring this large industry from current regions which have the infrastructure for steel such as Youngstown and perhaps Pittsburgh.

To quote Edgar Speer, Chairman of the Board of U. S. Steel, this project would ultimately achieve employment for some 8-10,000 steel workers and some 30,000 steel industry related workers. (See Conneaut News Herald, Feb. 24, 1977.) Based upon simple formulas that estimate the number of backup personnel and families required to support this type of on-line work force, one can see the region expanding from a current 15,000 or 20,000 persons to an urban center of some 250-350,000 or more by the late 1900's. Lest this estimate be considered light speculation we should refer to the DEIS recorded A-3 projection for increase in consumption of natural gases. This projection is for an increase from 30 million cubic feet in 1978 to more than 900 million cubic feet in 1990 (DEIS 3 4-438). U.S. Steel repeatedly states it will not use natural gas at this project site. The increase in consumption of natural gas must therefore be assumed to go hand in hand with increased population density. A 30 fold increase in natural gas consumption would adjust nicely to the original work figures supplied by Chairman of the Board. Edgar Speer. It would add up to some 300-400 000 persons in this region by 1990. I do not believe that scientists from Arthur D. Little, engineers from U.S. Steel, or the Environmental Protection Agency people could or would argue that this would not convert this entire region to a massive industrial complex.

We need only look back to the hard winters of the last two years, to the closings of schools and industries due to shortages in natural gas, to realize that resources of energy to this corner of our two states is an important issue. Is it not energy waste and excessive cost to ask our two states to build the infrastructure for this applicant in this agricultural and garden center corner of our states simply because they want it so. Because they inveigh that it is economically sound for them does not mean that it is economically sound for the public interest.

Certainly, in the expenditure of energy, in the cost of developing the infrastructure (which the applicant has candidly stated to be the people's responsibility), in the deterioration of current valuable agricultural and water industry and in the probable abandonment of infrastructure of cities such as Youngstown and perhaps Pittsburgh, there is cost. Additional intangible cost cannot be fully appreciated, such as the increases in welfare rolls of those steel workers who refuse to uproot themselves from their native city when steel industry leaves them unemployed, or the increase in transportation and petroleum costs for those steel workers who will continue to live in their native city and commute

to the new facility. Mr. Speer, and I quote the PD, 8/18/78, has accused the Mahoning Valley ecumenical coalition of a communist conspiracy in their effort to keep the steel mills in Youngstown. I believe it is the effort of responsible public citizens attempting desperately to stave off the loss of their life lines.

These costs to public and nation are not genuinely addressed in the DEIS. Furthermore, the sparsity of pertinent data relative to this issue leads one to question the economic soundness of the "greenfield" approach even to the company itself, that is even when we separate cost from the point of national interest. Witness, for example, this report from a Chase Manhattan Bank study (Construction Equipment, 7/17/76).

> "Greenfields construction, defined as construction of a A-4 new site transportation facilities, plant and equipment, would require a price of $427.0 per ton in 1979. Chase forecasts the going rate will fall 15% short, a $370.05 per ton. 'That represents a loss of almost $60 on every ton on steel produced. Under those conditions, greenfields expansion in the steel industry cannot be justified during the next ten years.'
>
> "The alternative is brownfields expansion, where an established site is upgraded with a new plant and equipment. 'It is much more feasible in the next decade.'"

Could it be that the only real economy to this applicant would occur as a consequence of its ability to escape costs of environmental clean up at existing facilities by the process of A-5 relocation rather than repair? If this were the case it points again to the question that this large company may not be serious in its responsibilities to communities that had previously committed their manpower and environmental resources to steel industry.

Permit for waste discharge facilities into Lake Erie.

According to the DEIS, Ohio water quality standards would not be met for the water discharge content in phenols and dissolved solids. More than one quarter of a mile from the parameter of this discharge A-6 facility, the concentrations of these materials would again be within the limit of what some persons believe to be adequate quality. This does not mean that these materials would have disappeared. They would simply have been diluted in concentration; the ingredients would still be present. If they can be diluted, they can also be concentrated as, for example, in a biological chain.

Because of past abuse as expedient sites for waste discharge, resources of drinking water across this country are on the verge today of becoming major problems in health care. The progress that has been made during the past decade to clean our water resources should not be made to suffer any reversal no matter how large or how small, particularly in this very clean region of Lake Erie. We owe this to the more than 10 million Americans whose drinking water is predominantly derived from the lake basin, and to those Canadian neighbors, together with whom we have pledged a program of graduated improvement in lake waters.

Life of fish may be taken as a measure of health. Without a guarantee by the EPA and the Corps that spawning grounds for fish would not be destroyed downwind of the proposed discharge facility, there is no basis for a discharge permit. For if this life cannot be sustained in the region, then ultimately we who drink the water
A-7 and who are by body composition greater than 70% water would have to share the problems of the fish. When this issue was raised at the Conneaut hearing, the response generated was that the fish would not be destroyed but that they would have to relocate. What a kind way to consider the consequence to these natural and commercially important spawning grounds.

We are further told that the content of phenols in the discharge water would be innocuous because its concentration would be no higher than in saliva. According to the DEIS (Table 4-277, P. 4-596, Vol. 3), the concentrations in discharge would be 56 fold greater than in the typical intake water at the best and 166 fold greater than in the typical intake water at its worst. Even if saliva did contain the same concentration of phenol as would this waste discharge allocation--50 million gallons of saliva per day--
A-8 for this is the volume of discharge sought in these permits--would require a great deal more spitting than even the applicant, together with all its workers and the 10 million persons who live in the basin, can produce. (Discharge flow 2181.7 liters/sec; 578.7 gal/sec). No, I do not believe that any of the gentlemen from the consultant firm of Arthur D. Little or the applicant firm would volunteer to ingest the phenol which has been condensed into a single glass of water from the discharge of even one minute of this stupendous volume output. The key in this issue is the total content of toxins to be discharged--not simply the concentrations.

Many of the pollutants that may be present in waste water
A-9 from a steel mill are known or suspected carcinogins, i.e., agents

capable of inducing cancer. There is likelihood not only that these would impact Erie's water supply but also that of Conneaut which is less than 2 miles from the discharge facility itself. The need to determine this potential impact prior to issuance of permits is clear.

A serious question can be raised that a major reason for relocation of facility from sites such as Youngstown may not reside in economic consideration so much as in anticipation of future environmental regulations pertaining to water quality control. For it is obvious that waste discharge allocations cannot be as
A-10 effectively diluted and hence hidden in the Mahoning River as they could be in the whole of Lake Erie. The importance of the lake as a major resource for water, industry and recreation and the particular vulnerability of this great lake render it imperative that no backward step in clean up occur--that dilution not be permitted to hide pollution. One way around this issue is to require 100% recycling utilizing filtration apparatus and cooling ponds. This would obviate the additional economic burden of precise monitoring and enforcement systems. Neither of which have been adequately addressed in the DEIS.

A completely closed recycling system--as I understand it--is feasible and currently in the process of being planned by the Japanese steel industry. In point of fact, the final EIS should contain a comparison of waste water allocation from such competitive facilities as the Kimitsu Works in the south of Tokyo and the Ohita Works located in the southern section of the Kyusha Island. The EIS should also include for comparison purposes the degree of water recycling and discharge in the best of the new Japanese facilities. My understanding is that the Kimitsu Works
A-11 which now produces 7-8.5 million tons of steel annually has a daily discharge in total suspended solids of only 400 Kgm as opposed to 1260-3630 Kgm/day for the proposed plant. The issue of chemical oxygen demand imposed by the solute in waste discharge is critical to survival of fish life. In the case of the Kimitsu Works this is said to be less than 2 ppm. I believe this issue is not at all addressed in the DEIS, at least not within the data presented in Table 4-277, Vol. 3, P. 593-94. Let us hope that within the above figures are hidden substance or matter not to be substantiated upon close scrutiny--otherwise how sad that our governmental agencies stand before the public decreeing waste load allocations and proclaiming best available technology that which may already be behind the present generation of the technology of our foreign competition.

Since the plant facility has been proclaimed to contain
A-12 best available technology the final EIS should address a comparison

of all pertinent technologies inside and outside of the country. Not simply that which is defined by the EPA as best available technology. Waste load allocations should be zero in all potentially harmful solutions. There should be no compromise in the quality of this region's water. We can be expected to settle for nothing less:

Air pollution. According to the DEIS, emissions from the proposed lakefront plant would cause deterioration of the region's air quality. Data are not available to predict the impact upon area vegetation and agriculture. This data should be obtained prior A-13 to, not after, issuance of any permit. It is of no comfort to learn from the DEIS that the applicant would initiate a monitoring program to identify and define the effects of its pollution on vegetation if this were to be done after construction of the plant is already in progress.

The contributions from this plant to ozone concentrations downwind from the proposed mill is a most critical issue. These would--as I understand--exceed ambiant air quality standards for this toxin. In response to a question at the hearing in Erie, Pa., a scientist from Arthur D. Little answered--if I may quote him:

> "With respect to ozone which is the principal concern where a problem has been reported already in some of the grape growing areas, particularly of New York State, the document in the analysis indicates that overall because of the requirements of the Federal EPA and the commitments of the states of Ohio and Pennsylvania to implement those requirements it would be a net overall reduction in the reactive hydro- A-14 carbon emissions that are considered crucial to the formation of ozone. In fact, as I understand it, the region being considered where this so-called emissions offset would be required encompasses the two states in its entirety. Looking at it from that geographic perspective the projection is for an overall reduction. The only conclusion we could come to on that basis was that overall there would not be an incremental adverse effect due to the presence of the lakefront plant."

This statement points out several issues:

First, there is no issue concerning the statement that combined air quality standards for the region would be exceeded in this important photochemical toxin;

Second, that both Ohio and Pennsylvania recognize the importance of its potential hazard by their commitment to implement the ambient quality standards for ozone; and,

Third, that when one wants to bypass an important legislation or roadblock there is almost always a way.

To offset increases in ozone content in the region downwind of the applicant with decreases throughout the states of Ohio and Pennsylvania in their entirety is to gut this important regulation of any substantial meaning. Why not expand the offset to the entire United States if necessary to achieve the desired result. How would a decrease in ozone emissions in Pittsburgh, Youngstown, or Cleveland--if this is where the offset would be obtained (perhaps by closing of steel mills)--how would this decrease the hazard of ozone to people and agriculture in Erie County? Air quality standards to oversee the health and welfare of people and the regulations that permit offset to adjust for changes in industry must apply to precisely the same region of nonattainment if there is to be any substance in the matter.

A nonattainment area--as I understand it--can be defined as a region which is shown by monitored data or which is calculated by air quality modeling to exceed national ambient air quality standards for a given pollutant. Within a localized region of such an area, offset or tradeoff makes sense because decreases which equal increases add up to no change. But decreases in Youngstown or Pittsburgh would hardly be expected to decrease the health and agricultural hazards of increased ozone emissions over Erie County. A-15 If this should be the logic that the EPA pursues it must first convincingly demonstrate (?) that the direction of airflow from all points within the two states does indeed converge on Erie County; and, (2) it must show with research data that decreases in ozone emissions at representative points within the boundaries of these two states would achieve corresponding decreases in ozone concentrations in Erie County. To do otherwise would be to gamble freely with our most vital assets.

Turning back to the comments of the representative from A.D. Little, I quote again:

> "...Looking at it from that geographic perspective (that A-16 is of a two-state offset) the projection is for an overall

reduction. The only conclusion we could come to on that basis was that overall there would not be an incremental adverse effect due to the presence of the lakefront plant."

Well sir--the only conclusion I come to from this statement is that when an organization is employed for a specific purpose it must indeed work very hard to produce the desired result. Colonel, I make this point because you have indicated before that as much as 90% of the data base which you must use to arrive at this very important decision has been generated by the applicant who seeks the permits. To add to this, the data has been accumulated on a contracted time scale. While it is all very nice to say that this was possible because of cooperation between Federal agencies, the Corps and the applicant, it does not do justice to the fact that data for parts of a study pertaining to a project of this magnitude frequently require periods which transcend seasonal variations for two or more years in order to assess total impact. The contracted time scale more than anything reflects the time schedule set by the applicant, not the practical feasibility for evaluating total impact.

I would request that the data base itself be re-accumulated, at least in part, by agents independent of the applicant prior to any decisions in the matter. For it is to you--not the applicant--that all of the people look and hold responsible for the protection of their vital interests.

Which brings this discussion to the issue of your responsibility as the chief liaison of the lead public agency. On page 6-2, Vol. 4, it is stated, and I quote:

"Although all of these activities have secondary environmental implications the Corps of Engineers permit only controls those activities within its regulatory jurisdiction. Regulation of air quality secondary development, land use changes, water quality (associated with point source discharges) are the responsibility of other Federal, State, and local governmental agencies, not the Corps of Engineers. If the Corps permit was issued for this facility it would only relate to those activities listed above."

A-17

This statement seems to suggest that the Corps would issue permits for the entrance pier, the intake and discharge facilities

and for placement of fill in Turkey Creek quite apart from the feasibility to obtain appropriate standards for other permits necessary for this project. Dividing the projects required for approval would be a sure way to insure that total impact not be accurately and/or objectively assessed. We urge that this not happen, that no permit be issued unless and until requirements satisfactory for all permits, both primary and secondary, are achieved. To do otherwise would not be fair to either the public or the applicant. It would place unnecessary forward pressure upon our agencies to compromise their standards in order that a large costly, partly completed, project should be able to move forward, or, it would cost the applicant considerable financial loss should the total impact prove to be too negative to permit an ongoing project to proceed.

Location of discharge pipe and blast furnaces. Among the important issues of these hearings the pollution of the water we drink and the air we breathe and depend upon for agricultural industry most directly affect the downwind neighbors within the state of Pennsylvania. Why should the two most important contributing factors, the water discharge facility and the 168 blast furnaces, be placed in Ohio instead of Pennsylvania? Surely, God, in his wisdom, did not confer with U.S. Steel to determine specifically where these facilities should be located when this Great Lakes Region was conceived. What they request in the specific locations should not be taken as an exclusive approach. There is ample room within the more than one mile of shoreline which U.S. Steel possesses in the State of Pennsylvania for these facilities. It is common knowledge that Ohio pursues more lenient policy toward offenders of environmental regulations. This aside, why should these facilities not exist within the state that would have greatest reason for adjudication pertaining to enforcement of environmental regulations. To place the facilities in Ohio would pit state against state and provide an entanglement--a legal morass--which could effectively shelter this company for decades should the need for prosecution arise. U.S. Steel, in the past, has demonstrated remarkable talent for delay of enforcement even when legal proceedings are pursued through a single state channel. No significant reason was advanced in this impact statement as to why these placements need be located in Ohio.

A-18

Furthermore, should U.S. Steel justify these arrangements in terms of conveniences to coal storage facilities; we should be reminded

A-19

of their range of flexibilities when the need arises. For the simple expediency of escaping taxes on materials in transit when legislation to this effect was passed within the State of Ohio in the 1950's, U. S. Steel moved its storages of iron ore to the State of Pennsylvania where they remained until Ohio tax law was repealed. These mountains of material were then again moved back into Ohio. U. S. Steel does indeed have the resource of mobility or fluidity when the need for such arises.

Element of faith not a basis for action. Much has been made during preceding hearings concerning the extremely poor environmental record of the applicant, even among other steel producing companies of this country. This record speaks for itself--more need not be said except to point out that the objective of the discussions bearing on prior environmental records and prosecutions A-20 was not to embarrass this corporation. The objective was to show that the element of good faith is not a viable basis for action. A case could in fact be made that permits for any new facility should be automatically denied this applicant until such time that it merit consideration for responsible development of major industry in a clean environment region. The manner in which merit could be earned would be by complete resolution of environment problems at all of its other mill works-- resolution by shutdown not being an acceptable alternative.

The real questions which remain--in the minds of many--stripped of all veneer, are:

(a) Is it indeed possible for the applicant to develop a facility in this corner of our two states which has, now and for the future, no adverse impact upon existing water and agricultural industry or on the health and welfare of persons already living in the region who do not want major A-21 change from their present ways of life? This is indeed an important question, for these persons who own lands and industry collectively far in excess of that of the applicant are as entitled to freedom of use of their lands, in ways to which they have been accustomed, as is the applicant to use of its lands--i.e., provided that such use does not impinge upon basic freedoms of either parties as guaranteed by our constitution and law; and,

(b) Does the applicant genuinely intend to create add on A-22 production facilities with this project or is it biding a

holding action? Is it willing to continue polluting at existing facilities and to be fined until it can relocate these facilities to a region it can politically control; one which can be bent to more readily tolerate the quantities of particulate matter and chemicals it must emit: one which, because of current vacuum in political, people and industrial structure, would be ultimately and utterly dependent upon the steel industry; therefore, not a location likely to challenge the applicant's action--by definition a naked steel town.

Should permits for the project be granted, some of the pessimism expounded herein could be safeguarded if:

1) Prior to issuance of any permit by the Corps of Engineers, air and water standards equal to existing qualities of A-23 these resources in this specific region are first clearly defined;

2) If a specific mechanism for policing these regulations is clearly defined and provided; and, finally,

3) If any permit issued carry with it the stipulation that it would be revoked without adjudication upon identifiable breach of regulation.

We live in a world today which can no longer be considered infinit in resources of air and water, a world reduced in relative size by our population increases and the magnitude in advancement of our technologies, a world which must be treated with utmost respect for the life line that it gives to us--and if our children and our children's children are to have those benefits which our generation of decision makers have had, or to even survive at all, we must work together to preserve the best of all of our resources as well as the best of our technologies.

Thank you.

Respectfully,

Donald D. Anthony
2160 W. Taylor Road
Cleveland Heights, Ohio 44112

Footnote No. 1.

This statement treats the request for greenfield facilities predominently as a translocation. The applicant states in the DEIS that its facilities at other sites would continue to remain operational so long as they remain in a profit mode. There is no reassurance for this policy. Moreover, the issue of profit can be readily turned to loss and hence shut down if--when already depreciated facilities such as Youngstown works become completely obsolete and/or break down--the cost for renovation is added to cost of production. Current evidences point to eventual shutdown at the Youngstown works and certain sites such as the Cleveland works are already announced for closure. Additional reports relating to environmental problems, such as the series of full page advertisements sponsored by the applicant in the Pittsburgh Press (see enclosure), do not help but foster this view. Moreover, this greenfield expansion at a time of shrinking American markets does nothing to foster the view that this facility would be expansion rather than relocation construction. The DEIS takes the loose words of the applicant, that an expanded market for American steel will occur in the 1980's, too much at face value. As a matter of fact, the realistic concerns for energy--petroleum conservation push gasoline rationing to the near future. With this a decrease in the automobile market or at the very least a decrease in size of vehciles should prevail. This might lead one to predict a decrease in steel markets. It would be wise to enlist the aid of other steel industries in accurately assessing future market predictions.

A-24

One further point--even should the Corps choose to regard this new facility as expansion rather than relocation construction--the evidence that steel industry shrinkage is already occurring in steel towns such as Youngstown remains uncontestable. Irrespective of who has produced or contributed to the problem in cities such as this, the addition of a new facility to such a location would make a positive contribution to the nation's urban centers.

September 28, 1978

Colonel Daniel Ludwig
District Engineer
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Re: Environmental Impact Statement
for Proposed U.S. Steel Facilities
and Modification of Conneaut Harbor.

Dear Colonel Ludwig:

Would you kindly add the following addendum of corrections to my statement of August 28, 1978:

On page 10, paragraph 2, line 1, the following words:

blast furnaces

should be corrected to read:

coke ovens

In line 6, of the same paragraph, the reference to:

168 blast furnaces

should also be corrected to read:

168 coke ovens

Certain information throughout this statement is referenced as to source. The abbreviation "PD" has been used to designate "The Plain Dealer", a Cleveland, Ohio, newspaper.

Thank you.

Very truly yours,

Donald D. Anthony
2160 N. Taylor Road
Cleveland Heights, Ohio 44112

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Mailgram

1-018591C257 09/14/78 TLX REF WUI C HONO BUFA
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U.S. ARMY ENGINEER
1776 NIAGARA STREET
BUFFALO NEWYORK 14207

REGARDING DRAFT E.I.S. FOR U.S. STEEL PLANT ON LAKE ERIE.
FOLLOWING DEFICIENCES IN THE ABOVE DOCUMENT ARE SENT IN LIEU
OF THOSE SENT EARLIER IN CABLEGRAM DATED 9/7/78.
ADM-1 1. METHODOLOGY ON AIR QUALITY ANALYSIS WITH CONSTRUCTION OF
PROPOSED PENNSYLVANIA ELECTRIC COMPANIES CONO GENERATING
PLANT NOT GIVEN. 2. POSSIBLE IMPACTS TO TURKEY CREEK WATERSHED
ADM-2 WITH MORE THOROUGH EXPLANATION OF ALTERNATIVES TO THE NEED FOR
USE OF SUCH AREA NOT GIVEN; 3. MORE THOROUGH ANALYSIS OF
ADM-3 POPULATION CHANGES THAT WILL INTURN PRESENT SECONDARY IMPACTS
TO WASTE TREATMENT WATER SUPPL ES AND SCHOOLS IS NEEDED;
ADM-4 4. DISCUSSION OF ALTERNATIVE WASTE WATER TREATMENT WITH AN EYE
TO ALTERNATE SELECTION OF THAT ALTERNATIVE WHICH ASSURES
MAINTENANCE OF HIGH WATER QUALITY STANDARD IS NEEDED;
ADM-5 5. ALTERNATIVE METHODS OF WATER INTAKE WHICH INCLUDES OTHER
METHODS FOR COOLING IS NEEDED. 6. ALTERNATIVE STRUCTURES TO THE
ADM-6 SOLID FILL PIER EXTENSION THAT WILL ASSURE ADEQUATE WATER
CIRCULATION IS NEEDED.
CORDIALLY,
JACK SCHWEIGERT
ATTORNEY FOR DOWNWIND NEIGHBORS

1329 EST

MGMCOMP MGM

TO REPLY BY MAILGRAM SEE REVERSE SIDE FOR WESTERN UNION'S TOLL - FREE PHONE NUMBERS

A-3

September 20, 1977

Colonel Daniel Ludwig
Corps of Engineers
1776 Niagara Street
Buffalo, New York

Dear Colonel Ludwig,

A number of us who have worked together in Cleveland, since May of 1977, with increasing attention to the issues of the proposal to build a steel mill at Conneaut, and have participated in many phases of the process for evaluation of this project, hereby submit our further comments. Much of this concern has already been expressed, in letters, conversations, and formal testimony. We believe, however, that this distillation of what we have learned can contribute to developing a "full disclosure" of the factors that must be considered for a determination of the public interest. We are counting on your inclusion in your consideration of all the points that have been discussed at public meetings, which we include by reference from us and from others here. We also hope for the benefits of the technical analysis that is expected from the governmental agencies.

1. What has been the disposition of the issue of the SO_2 emissions situation? The applicant's initial proposal, to monitor SO_2 production after completion of the project, being ludicrously unacceptable, it is crucial for those who operate the downwind nurseries and vineyards and strawberry fields to know what degradation of their life support system must be anticipated.

ARC-1 2. We request, in the answer to the above, a mass balance (by materials, by element, by compounds, and with indication of known intermediates and suspected carcinogenic precursors) for the mill, from intake, through each step, process by process, to the various fabricated products and the full set of wastes. This information would be most generally useful if it could be tabulated in a number of different forms, for various applications. For example we would need not only concentrations (as µg per cubic meter) but also actual tonnages per ton of steel produced. This will permit ready translation into the terms needed to understand how much material will be added (per hour, day, year) to the nearshore waters of Lake Erie, or

dispersed into the air over northwest Pennsylvania, northwest New York, nearby Ontario, and points east. This data would also continue to be useful for discussions of the tightening of water quality standards, and for the redesign of offset policies in air pollution control.

ABC-2 3. We request, similarly, an energy balance, again process by process, to aid in understanding the alleged "40% reduction" in energy use requirement per ton of steel produced. This should include the Btu that will go into warming the air, as well as the addition to the water.

4. We also request, an up-to-date compilation of the possible energy sources that are being considered to provide power for the mill. We need to know what fuels are sought to create electricity, and would
ABC-3 like, here and elsewhere, to know what figures are being utilized in extrapolating energy prices. It would also help, in dealing with some prevalent rumors, to have the Statement be explicit about what power sources are <u>not</u> being considered (e.g. floating nuclear power plants, offshore!)

ABC-4 5. What, in the present instance, is the meaning of "Best Available Technology"? How does this relate to the statutory definition, and its various interpretations? Through what lines of reasoning have such technologies as "dry quench", phenol recovery, a water-conserving closed loop design such as used in South Africa been left out of the
ABC-5 design? Since the promises to the public of " best state of the art the world provides" (Mr. Curtis, Ashtabula hearing, August 14, 1978) do not appear to be met by what has been disclosed concerning the mill design, how are these matters to be resolved?

ABC-6 6. More specifically, how does the applicant account for instances where the pollution loads anticipated for several process in the proposed mill exceed those reported from foreign countries, especially the newest mills in Japan?

7. We request, clarification of the relationship that the current
ABC-7 port enlargement project has to the proposal for the steel mill. Considerable bitterness has been created in connection with this set of issues, dating back to the road closings and the restriction of access of fishermen to a public fishing pier. The conveyor that now stands visibly next to the harbor may or may not be the conveyor that is mentioned in the permit applications. This whole area of concern deserves full disclosure
ABC-8 We cannot let one agency of government do impose land use decisions that have not been authorized by the full acquiescence of the citizens. Have permits been granted? Have there been hearings? Through what channels was the $12 million dollars for port modernization authorized?

ABC-9 8. To assist in disclosure of the above developments, we request an accounting of the changes in land use that have been effected since, say 1969, in the relevant area bounded by Conneaut Creek, Lake Erie, the

Pennsylvania border, and I-90, by or on behalf of any of the following entities: Conneaut Port Authority, Pittsburgh and Conneaut Ore and Dock Company, Bessemer and Conneaut Railway Company, U.S. Steel Corporation. This should include, with dates, the vacating of the roads through action of Conneaut City Council, the demolition of cottages, the closing off of access to the public pier, the clearing and regrading of the land north of the Conrail track, any filling of wetlands in tributaries to Turkey Creek and Conneaut Creek.

9. How, in a straightforward attempt to develop an adequate Environmental Impact Statement, with the "full disclosure" that will permit a determination of whether or not the building of such a mill is in the public interest, are we to deal with the persistent rumors that United States Steel
ABC-10 Corporation is not actually intending to construct the mill, but may be using this debate to promote somewhat different goals? Should we ask to know every land purchase by U.S. Steel and its subsidiaries? Do the words of Edgar Speer, filmed for the public meetings this summer, represent the Corporation's agenda? During the long months, during which the EIS was in preparation, the newspaper reports of the steel industry's desires fluctuated considerably. Where does this historical project fit in?

10. Has the Corps, in assuming the role of lead agency for the evaluation process, made arrangements that all the successive permits that would be required to get the plant built are written so as to be "conditioned"
ABC-11 on the successful achievement of all the other permits? We dare not, (see our comment 1) contemplate having the nation's treasure invested in a facility of this magnitude that might, later on, prove to be unfit to operate. And, certainly, in the light of all that we have learned, in the 1970's, about the extent of our ignorance of chemical effects upon our life support system (food, water, air) we dare not, ever again, build now and pay later.

11. What can be done, through this document which has to be seen a landmark in national policy, to dispel the mythology about JOBS? We have suffered the disruption, at our public meetings of the members of the construction industry who, in fact, are the most mobile element of our work
ABC-12 force, so that they, least of any, have a stake in one site, over another. Their jobs are just as good, rebuilding in Youngstown as starting fresh in Conneaut; perhaps there is even more labor, in fact, in rehabilitation, since there would have to be a certain amount of demolition in advance of modernization where the site is already built upon. The rhetoric about CREATING JOBS must be refined so as to distinguish WHICH JOBS? and JOBS WHERE? And certainly the price tag must be displayed, in each instance, where the "profitability" of a new plant is contingent upon vast outlays by township or county or state governments for the needed infrastructure.

12. The value in the nation, of the present largely agricultural activities of the Conneaut region has not been adequately examined. For city dwellers, who cannot grow their own food, the displacement of their "support system" will show up in higher prices. The closed factories in the "Flats"

of Cleveland or in the Mahoning Valley could not substitute as vineyards or cow pastures. If tax reform is needed to recognize that agricultural use is probably the "best and highest use" for these Lake Erie shorelands, then let us seek it. Conceivably, these relationships could be opened up by an examination of the alternative sources of these agricultural commodities, and the additional miles of transport that would be entailed. This has to be done.

13. In order to evaluate the relative costs of a lakefront site and a site that is inland, we not only must postulate a value for perserving the shoreline, but we need to state the true costs, probably expressed in Btu, of rail transportation compared with water-borne systems. In the absence of any meaningful user charges for lake shipping, we must calculate the subsidies to shipping that lie in the proposed winter navigation program, the enlargement and deepening of the locks and connecting channels for the lakes, the port enlargements currently underway, and the relationship of all of these to the new dangers that will come if we acquiesce in the introduction of longer and longer ships. This nexus of costs, which would be externalized through claimed "economies of scale", is by no means fully understood. ABC-13

14. In the above connection, it is important to understand better the benefits of rail transportation. There is considerable evidence that this offers the "low energy path". Where costs and delays are related to current contracts with labor unions these must be recognized as human artifacts, subject to redesign through accepted democratic processes. The inexorable realities of the Law of Gravity and the Second Law of Thermodynamics cannot be negotiated.

15. What has been learned from the attempt to speed up the process of preparing the Impact Statement? It was in February, 1977, that we read that "U.S. Steel's Board Chairman, Edgar Speer is putting a January 1, 1978 date on the study, to accomodate his corporation's need to process more steel by the early 1980's" (Conneaut News Herald). Considering that the average time for completion of an EIS is taken to be 36 months, which of the innovative techniques that have been tried, in concurrent engineering design and impact analysis, have proved to be just as informative as the older sequential procedures? Which areas have suffered? Will this experience encourage federal agencies to try to accelerate future EIS preparation, or does this experience show that there is indeed an irreducible minimum? ABC-14

16. Because many environmental insults go up in intensity as the third power or the fourth power of the various dimensions of the new facility, would you make a rough calculation of the relative burdens to the ecosystem of this proposed single vast plant, and then compare this with the burdens, distributed, of two plants, each half the capacity. Also (if this seems fruitful) for four plants, each a quarter the capacity. Armco Steel, we have heard, has found it profitable to have smaller plants, nearer their markets. ABC-15

Would these gains, in adapting more closely to the assimilative capacity of the air and water (and, presumably, the social environment) help to balance significantly against the economies that certainly seem, in the present design, to accompany the plan to have three blast furnaces, together? Or, from another approach, would three blast furnaces, but smaller, at each of two locations, be easier to live with? (This scaling question is, of course, becoming increasingly urgent in the planning for sewage treatment plants where instream flows are better maintained if a number of dispersed smaller plants return the water close to its point of extraction).

17. What is the basis for U.S. Steel's anticipation of an increase in demand for steel in the 1980's. We have heard about the need to replace all the highways and bridges, and rebuild all the (very steel-intensive) steel mills. But does this represent a future with rationed gasoline, reduced GNP, frugality in energy use, a shift from planned obsolescence to an acceptance of the moral imperative of maintenance and rehabilitation? ABC-16

Let these stand as our formal contribution for the comments on the Draft Environmental Impact Statement. We look forward to continuing contact with this process and to participating in the development of procedures that will ensure that the affected publics have adequate information upon which to base their decisions.

Sincerely,

Ellen Knox

Joseph J. K. Wisneski
Joe Wisneski

Don Anthony

for the Conneaut Ad Hoc Committee
2160 N Taylor Rd
Cleveland Heights, 044118

BOROUGH OF ALBION

15 Franklin Street -:- Albion, Pa. 16401

August 22, 1978

Colonel Daniel D. Ludwig
District Engineer
U. S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The Council of the Borough of Albion wishes to call to your attention inaccurate information in the Draft Environmental Impact Statement (2-444)regarding our water system. The DEIS indicates that the system serves "a total population of about 2000;" however, the system actually serves about 2850 people. The DEIS is accurate in indicating that daily consumption is about 150,000 gallons. The information on the size of the reservoir is also correct We take strenuous exception to the statement that the daily design capacity is 600,000 gallons. The borough is now suffering a major water shortage and we have in six days trucked in more than half a million gallons of water just to meet minimum demand. In terms of the capacity of the wells to produce water, it is doubtful if we can even sustain the 160,000 gallons per day that our users require. The pumps are capable of pumping about 120,000 gallons per day at best; the rest has come through gravity flow. Moreover, our antiquated distribution system most probably could handle little more than the 160,000 gallons per day. We have few eight inch lines, and many street lines are two inches or less. We believe that the description as it stands in the DEIS would lead readers to mistakenly believe that the borough has a more than adequate water supply and system. The fact is that we have a long-term water shortage and an inadequate system. We trust that you will take whatever steps are necessary to fully correct this very serious deficiency.

RA-1

We know that you will look into this matter and will notify us in writing of your conclusions.

Sincerely,

Jack N. Gunter
President of Council

Apartment Ten
1403 Peninsula Avenue
Erie, Pa. 16512
September 3, 1978

Thomas R. Braun
LTC, Corps of Engineers
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

The following was prepared in response to your request for comment on the Draft Environmental Impact Statement for the proposed United States Steel mill near Conneaut, Ohio.

The DEIS has a serious omission in the area of waste heat recovery. Expensive means of cooling large amounts of generated waste heat are discussed, with little regard to the possible application of this valuable form of energy. In no way can this be considered "state of the art" technology.

While the DEIS states, "...several individual operations will have waste heat recovery," it goes on to say that space heating will be provided by either steam or electric space heaters.[2] An on site generator will provide this power by burning coal.[3] The consideration of using electrical heaters (one of the most inefficient means of space heating [3]) in the same facility where waste heat is abundant, is nothing less than absurd. Care is taken to assure that emission standards for particulates and sulfur dioxide from the burning of coal will be met. However, no guarantee of sound conservation is made to minimize the amount of coal used.

BTS-1

The mismanagement of waste heat is a problem with grave consequences.[4] The production of 151×10^6 tons of steel is estimated to lose 1.62×10^{15} Btu per year of work.[5] Present technology can economically recover large portions of this wasted energy.[6] The DEIS reveals that U.S. Steel is not planning to fully utilize this resource in their new plant.

In light of the above information and the sources noted, the Final Environmental Impact Statement would be incomplete without:

a) a complete listing of all waste heat, including temperature

ranges and energy equivalents.

b) a complete discussion of planned heat recovery equipment and projected savings of fossil fuels.

c) a complete analysis of the pros and cons of heat pumps, Rankine cycle engines, and waste heat energy cascading. Explaining why these and other systems will or will not be used.

Sincerely yours,

Bradley T. Shaw

Bradley T. Shaw

1. DEIS page 1-158.

2. DEIS page 1-153.

3. Barry Commoner, The Poverty of Power (New York: Bantam Books, 1976), pp. 28-29.

4. Gene I. Rochlin, "Heat: The Ultimate Waste" in Scientific Technology and Social Change ed. by Scientific American (San Francisco: W.H. Freeman and Company, 1974), pp. 330-338.

5. Beno Sternlight, "Capturing Energy from Industrial Waste Heat," Mechanical Engineering, August, 1975, p. 31.

6. Kenneth G. Kreider and Michael B. McNeil, ed., Waste Heat Management Guidebook (Washington, D.C.: National Bureau of Standards, 1977).

331 Lincoln Avenue
Erie, Pa. 16505
Sept. 6, 1978

Colone David Ludwig
U.S.Army Engineers, District Buffalo
1776 Niagara Street
Buffalo, N.Y. 14207

Dear Sir:

Although I have a horrible feeling that the whole matter of the U.S. Steel Mill on the Pa/Ohio border is already settled by the power structure, a small bit of hope, a little glimmer of faith that in the U.S., unlike Russia, people still have a voice in their own destiny and that of their area, makes me write you this protest to the building of the U.S. Steel Mill here.

I see only three points in favor of the plan:
1. Immediate work for construction men.
2. High salaried work in the mill when it goes into operation.
3. Sudden wealth for the people who possess land in that area.

There are many reasons I am opposed, many based on the U.S. Little Impact Statement. Here are a few:

CAM-1 1. I understand that in the long run the mill will increase employment in this area only 1/10%. Against this, an influx of labor from other sections will add to our inflation. Welfare costs, for workers moving in and losing their jobs, will be an extra burden on Erie Co. Higher cost of living will be hard on those not employed by U.S. Steel and hardest on those with fixed incoms.

CAM-2 2. Small companies which could employ local labor will be kept out of Erie, if the big steel mill uses up most of the allowable pollution level.

CAM-3 3. Extra costs, which will result in higher Erie taxes, will be enormous: water, sewage treatment. It will be a drain on utilities.

CAM-4 4. Many jobs may be lost if Erie tourism is affected.

CAM-5 5. Jobs in agriculture will definitely be lost. Remaining agriculture will undoubtedly suffer due to pollution increase, "acid rain"

CAM-6 6. Erie is already a prime cancer area, we should not make it worse.

CAM-7 7. I understand U.S. Steel plans to put its discharge on the Ohio side because Ohio laws in this regard are less strict than Pa., but the current is Eastward toward Erie and the peninsula.

CAM-8 8. Urban Sprawl, as predicted in the book "1984".

9. It is not in the public interest to put a steel mill on a lake already shallowest and most polluted of all Great Lakes. A steel mill belongs in a steel town, not in a beautiful agricultural, fertile area. We need food just as much as steel. There are other places where steel can be made, but agriculture cannot thrive.

CAM-9 10. Influx of extra people may mean that vacationers, who stay here and spend their money here, may be crowded out by people just driving over for the day, who simply add to the cost of protecting the peninsula recreation and cleaning up.

BUT MOST IMPORTANT:

CAM-10 U.S. Steel's noncompliance in the past and EPA's inability to enforce promises very little protection if something does go wrong. If there is a fish kill, or people get sick and even die due to water or air pollution, will U.S. Steel abandon the mill or will there simply be lawsuits and promises for future improvement? Will fish or people be brought back to life?

Very truly, Agnes H. Martens
(Mrs. Charles A. Martens)

TELEPHONE (216) 593-3407

Ohio's Sharpest Corner

The City of Conneaut

PAUL WILLIAMS
MAYOR

RAYMOND V. WOLLSCHLEGER JR.
DIRECTOR

Dept. of Housing, Planning
and Community Development
244 MILL STREET
CONNEAUT, OHIO 44030

TO: The Honorable Paul Williams, Mayor

SUBJECT: Review of DEIS on the proposed U.S. Steel's Conneaut Lakefront Steel Plant

FROM: The Department of Housing, Planning, and Community Development

DATE: August 29, 1978

The following comments are submitted to insure that proper conclusions are drawn in evaluating the impact of the proposed steel facility on the City of Conneaut. Comments submitted pertain to sectors on housing, land use, zoning, and population.

1. Page 2-158, Table 2-89: Information used is accurate as of the 1970 Census of Housing. However, updated information is available in the 1976 Housing Assistance Plan. Most important is that the vacancy rate was 3.5 percent in 1976 compared to 7.6 percent in 1970. Presently, the City is experiencing a tight market for persons searching for rental units.

CCD-1

2. Page 2-578, Table 2-270; Page 2-614, Table 2-292: Discrepancies were found in the Existing Land Use for Conneaut. Land Use information has been updated as of 1978 and is as follows:

CCD-2

LAND USE	ACRES	PERCENT OF TOTAL AREA	PERCENT OF DEVELOPED AREA
Single-Family	2,420	14.4	56.8
Multi-Family	26	0.2	0.6
Commercial	276	1.6	6.5
Service	59	0.3	1.4
Industrial	122	0.8	2.9
Cultural, Entertainment, and Recreation	205	1.2	4.8
Transportation	1,154	6.9	27.0
TOTAL DEVELOPED	4,262	25.4	100.0
Agricultural, Vacant Land	12,508	74.6	- -
TOTAL ACREAGE	16,770		

3. Page 2-622, Table 2-296: Discrepancies were found in the information given concerning the amounts of land zoned in Conneaut for various usages, primarily in R-3, M-3, and A-1. The following are the correct allocations of land by Land Use Zones for Conneaut at the present time.

ZONES		PERCENT OF CITY LAND AREA
S-1	Special Use	10.4
A-1	Agricultural	38.6
R-1	Suburban Residential	7.7
R-2	Urban Residence	8.4
R-3	Urban Residence	4.3
R-4	Urban Residence	2.7
R-5	Seasonal Residence	1.8
B-1	Neighborhood Business	less than 0.001
B-2	Neighborhood and Commercial Business	3.7
B-3	General Business	1.0
M-1	Restricted Industry	3.7
M-2	Industry	0.8
M-3	Heavy Industry	16.9

4. Page 2-633, Table 2-302: Calculations concerning Projected Baseline Land Use for Conneaut as based on the Simpact IV Model would differ due to discrepancies found in the baseline data.

5. Page 4-68, Population: Various questions arise concerning the secondary population impacts of the operation of the proposed steel facility. Various methods have been developed to assess this secondary population growth in addition to projecting baseline growth.

CCD-3

1990 Baseline Population - Based on Census data, and local data concerning construction activity, school enrollment, population density, births, deaths, and the availability of infrastructure, the following estimate and projection have been developed for Conneaut.

1978 estimate - 15,230
1990 baseline projection 16,190

1990 Impact Population - Concerns arise in regards to the secondary population growth that will occur in addition to the operations related impact. Using an Employment Multiplier Impact Population Model, a probable 1990 Ashtabula County impact population of 16,181 was obtained. Using the A.D.L. distribution pattern, the City of Conneaut would have a 1990 population of 25,189. (The DEIS establishes a figure of 21,065 by 1990.)

6. Pages 4-466 - 4-475 Secondary Land Use Requirements: (Comments also pertain to two related Working Papers, New Residential Housing Requirements and Land Use Requirements.)

CCD-4 Projected land use requirements for single-family residential purposes are based on national trends and lot sizes. However, instead of 4 dwelling units an acre as found in the working papers, present zoning in Conneaut allows for:

R-1 1.45 - 2.9 dwelling units/acre
R-2 3.5 dwelling units/acre
R-3 5.8 dwelling units/acre

Vacant land available in Conneaut for residential uses is primarily zoned R-1 and R-2. In addition, there is a shortage of land available for multi-family development. These calculations would alter projected land use changes for residential uses as well as alter the cost of other related services the City would need to provide.

THE CITY OF CONNEAUT

City Hall Building
CONNEAUT, OHIO 44030
ROBERT W. WADSWORTH
CITY ENGINEER
PHONE 593-1901
(AREA CODE 216)

August 11, 1978

To: The Honorable Paul Williams, Mayor

Re: U. S. Steel Corporation Draft EIS, comments by City Engineer

The following comments are made in an effort to insure the proper conclusions are drawn when evaluating the impact of the steel mill on the City of Conneaut. The comments are primarily on the base line data; however, comments are also offered on the extension of the data as to future needs of the City.

1) Pages 2-427, 2-432, 2-433: The figure 3,875 is used as the number of customers served. The actual number of accounts is over 6,000.

2) Page 2-439 paragraph 2.352: An estimate of $200,000. to $300,000. worth of refurbishing is stated. Our current backlog of essential maintenance and replacement is:

CCE-1

a)	Elevated tank cleaning and painting	$ 85,000.
b)	Pump repairs/replacement	65,000.
c)	Support equipment	60,000.
d)	Distribution Line Cleaning	200,000.
e)	Distribution Valve repair/replacement	50,000.
f)	Replacement of undersized lines	1,500,000.
g)	Looping of system	750,000.
	TOTAL	$ 2,710,000.

The entire system also requires a meter replacement program with an estimated cost of $200,000.

CCE-2 3) Page 2-449 paragraph 2.372: The statement is made that "Most of the existing sewage systems have oversized interceptor sewers..." The City of Conneaut has very few interceptors that fall in this category. In fact, under existing conditions, many of our interceptors are surcharged during storm periods.

CCE-3 4) Page 2-480 figure 2-31: The figure shows an actual traffic flow of 5,319 for that portion of Route 7 north of US Route 20. An actual traffic count conducted in July, 1978, showed over 10,000 vehicles per day using this section of road. The City is in the process of building a grade separation at the Norfolk & Western Railroad and Route 7 crossing. It is expected that the completion of this project will increase the ADT on this route. Due to the above, the projection in Figure 2-32 must be revised. If the magnitude of error is the same for the other traffic counts taken in Conneaut, this entire section on traffic should be reworked.

The Honorable Paul Williams, Mayor, continued

5) Page 4-351 paragraph 4.300: The additional water main installation of about 3.2 miles is insufficient to accommodate the projected population increase. The City is presently preparing plans and specifications for about one mile of water main installation and the master plan being developed indicates the need for about four miles of water main to correct low pressure areas and to loop the system. There are also several miles of 4-inch water main that needs to be replaced to provide the proper fire flow requirements. CCE-4

The operating costs for the water system are also understated for the year 1990. As of August 1, 1978, the City had to raise the water rate to generate an additional $52,000. per annum to meet the current operating expenses. Additional funds must also be generated to meet the current backlog of essential maintenance and future capital improvements.

6) Page 4-366 paragraph 4.308: This paragraph states that no new interceptors will be required to serve the steel plant induced population increase. It goes on to say that expansion of the system into east, south, and the west will be required. The expansion of the system into eastern sector of the City is under way with the installation of an interceptor sewer. Due to the topography of the southern sector of the City, the most logical method of serving this sector is through the installation of a large gravity interceptor. Preliminary planning has already begun on this interceptor. The expansion of the system to the western sector of the City has severe problems due to the size and gradient of the present system. Also, portions of the present system become surcharged during storms. The most practical method of supplying sewer service to the western sector may be by installation of an interceptor from the western sector directly to the plant by-passing the older dilapidated central portion. If these solutions are adopted, the cost projection to expand the sewer system to meet future requirements is understated. CCE-5

I feel the time frame stated of 1979 for the start of system expansion is valid; however, as is evident, we are already behind the power curve due to the fact that our EPA Step I Facilities Plan is not complete and we do not have the tax base at present to proceed with the minor expansion not covered by the Facilities Plan. CCE-6

7) Page 4-385 table 4-196 and paragraph 4.318: In view of the statement in paragraph 4.318 that Conneaut possibly requires total replacement of the existing storm sewer system, I find it very difficult to arrive at the conclusion given in Table 4-196 that the City will only have an expenditure of $210,000. by 1990. I agree that our entire storm sewer system is in need of complete rehabilitation with major portions requiring replacement. The funding of this construction will more than likely be acquired through assessment and general fund receipts. CCE-7

The Honorable Paul Williams, Mayor, continued

8) Page 4-389 table 4-198 - Projected Population Changes: The methodology used in making this projection must be questioned as the 1990 baseline density has been exceeded as of August, 1978. The present density is 1.1. I do not feel that the City has had unusual growth during the three years that have elapsed since the 1975 baseline figure was calculated. This higher growth figure casts doubts on the requirements for infrastructure expansion as shown in the draft EIS. CCE-8

Traffic and Transportation Facilities: As mentioned earlier, the traffic count used for State Route 7 north of US 20 in the year 1990 has already been exceeded; therefore, the traffic data on the other streets are in question. The City is presently experiencing traffic problems at the intersection of SR 7 and US 20 which in the opinion of most citizens is now at service level E. Imposing additional traffic on this condition will be intolerable to City residents. CCE-9

I feel that the preferred action discussed in paragraph 4.354 is a sound solution; however, it should be supplemented with the construction of the US Route 20 bypass similar to that shown in the alternatives. I feel that this bypass should also be part of the Route 2 Freeway. The relocation of SR 7 to the east of it's present location into the Conneaut Creek Valley would also greatly reduce future traffic congestion in the central business district of the City. This relocation of SR 7 is shown in the Comprehensive Plan prepared in 1967 by Carroll V. Hill and Associates. CCE-10

This concludes my review of the Draft EIS for the steel mill. I have restricted my review to those areas that are directly related to my position as City Engineer. If additional comments are desired, I would be pleased to go into more detailed explanation of the points I have made.

Respectfully,

THE CITY OF CONNEAUT

Robert W. Wadsworth
City Engineer

RWW:mp

Telephone 216-593-4357

Ohio's Sharpest Corner

The City of Conneaut

PAUL WILLIAMS
MAYOR

ELDRIDGE D. SMITH, JR.
SAFETY-SERVICE DIRECTOR

City Hall Building
Conneaut, Ohio 44030

September 6, 1978

Colonel Daniel D. Ludwig, P. E.
District Engineer
Department of the Army
Buffalo District - Corps of Engineers
1776 Niagara Street
Buffalo, New York - 14207

Dear Colonel Ludwig:

As Mayor of the City of Conneaut, it is my obligation to take a stand regarding all facets of the possibility of United States Steel Corporation locating here.

I am not opposed to industry in general, but I am definitely against any industry that will cause pollution to our water and air resulting in great harm to the health and welfare of our people in addition to fish and game.

When all talks began regarding building of a mill in Conneaut, it was my understanding from these meetings with Chairman Speer, Governor Rhodes, Governor Shapp, and Mr. Speer's staff that United States Steel would construct the cleanest plant in the world without regard to cost, in order to prevent pollution. Statements were made by these representatives to the people of this City that they should not have any fear of the United States Steel locating in the area because their plant would be one hundred (100) percent pollution free, if not at least ninety-seven (97) percent pollution free. They also made statements to the effect that the water going into the plant would come out cleaner than it was when entering and that the air would be completely pure.

With the release of the Environmental Impact Statement for the proposed United States Steel facilities, it appears as if, I, as Mayor, and the people of Conneaut should be fearful of United States Steel locating here. The Environmental Impact Statement shows more negative than positive with the bad outweighing the good.

Colonel Daniel D. Ludwig, P. E. September 6, 1978

If United States Steel is granted a permit to build, I, as Mayor of the City of Conneaut, state that they should go above and beyond Federal and State Environmental Protection Agency regulations to keep their plant one hundred (100) percent pollution free so that our water and air are virtually pollution free.

The health and welfare of the people are of primary concern.

The following are comments concerning the adverse environmental effects concerning the proposed steel mill listed under the title of Primary Impacts.

CCM-1 — 1. The Turkey Creek question has not been adequately addressed; the proposed solution of completely eliminating this cold water stream is unacceptable. Other alternatives should be investigated before accepting the proposed solution. I believe this could serve as a recreational area for United States Steel employees and their families. With todays modern technology, it is feasible to save the stream, the water and the air.

CCM-2 — 7. The proposed plant will be emitting air pollution that falls within the EPA's Class II guidelines. It is my opinion that with the present state of technology, that a very limited amount of air pollution should be put forth by this mill. Considering the quality of air in Conneaut at present, would the emissions that fall within the allowable Class II limitations be the kind of air that is presently found in Cleveland and Ashtabula - just what are the Class II guidelines?

CCM-3 — 14. The Comments made by Arthur D. Little concerning the water quality; especially those effluents such as Phenol, is completely unacceptable to this office. Any further polluting of Lake Erie, especially considering our past efforts of trying to clear the Lake, should be looked at carefully.

CCM-4 — 22. Comments made by Arthur D. Little concerning trace elements, especially those that can accumulate sublethal levels in aquatic life, could pose a potential danger to fishermen; both commercial and sport. Again those amounts are not acceptable.

Your favorable consideration of these comments will be appreciated.

Very truly yours,

THE CITY OF CONNEAUT

Paul Williams
Mayor

PW:mja

Concerned Citizens
Post Office Box 517
Conneaut, Ohio
44030

September 6, 1978

Col. Ludwig:

Enclosed you will find comments of the draft EIS prepared by the Corps of Engineers for the applicant, U.S. Steel.

Though not a highly technical paper it still represents some of the basic feelings of the Concerned Citizens group. It is hoped that the comments will be inserted into the record of the final EIS.

Sincerely,

Joe Zingaro
Chairman, Concerned Citizens

Concerned Citizens
Post Office Box 517
Conneaut, Ohio
44030
September 6, 1978

To: Army Corps of Engineers
Re.: Comments, Draft EIS, Permit Application, U.S. Steel

1. Socio-economic factors related to plant construction.

A. It is felt that all population data has been insufficiently addressed. Low population figures in most areas will not permit suitable planning giudes for the impacted areas. Also, low population estimates made by the applicant's agency, the A.D. Little Co., are not based on factual data. The instrument employed to arrive at these figures needs to be scrutinized more closely. The use of past history experiences does not parallel the proposed industrial expansion by U.S. Steel. COM-1

B. Due to low population estimates, tax data has been misrepresented. The assumption made by the A.D. Little Co., that workers will commute to the proposed lake front plant negates the assumption made that these same workers will pay tax in the local impact areas. COM-2

C. The subject of housing shortages during the construction period has not been adequately addressed in the draft environmental impact statement. Thus, no alternatives have been provided to planners who might otherwise hope to lessen a possible housing squeeze. COM-3

2. Socio-economic factors related to post-plant construction.

A. Again, population estimates are too low. The worst case possibilites have not been adequately discussed in the draft EIS.

B. The adverse effects on local non-union industries havebeen sidestepped by the A.D. Little company. Again, to say that history shows not problems to this sort of industrial investment is a flagrant attempt to circumvent a crucial issue. COM-4

C. The loss of jobs to these industries already situated in the impact areas has not been addressed. It is felt that because of a higher pay base offered at the proposed lake front facility, local industries will either be forced to raise wages at their respective plants in hopes of keeping the employment force and to therby risk a lower profit margin or to seek a quick re-location of the industry in an area more suitable to the present wages already paid out by the company.

D. Cost figures given throughout the draft EIS have been based upon the U.S. dollar at its 1975 value. A reference is made to figures quoted in the draft EIS when the matter of wastewater treatment and storm water control is discussed. COM-5

Concerned Citizens
Post Office Box 517
Conneaut, Ohio
44030



It is mentioned that local municipalities within the primary impact zones will need to upgrade their present systems in order to accomodate the influx of new residents to the areas. The cost for such upgrading is figured on a 1975 dollar value.

E. The assessment of the school system located in Conneaut in Conneaut, Ohio lacks accurate data. The A.D. Little Company COM-6 spent but a few hours touring the actual physical layout of the system and also used data from an out-dated school system inventory.

3. Energy.

A. The draft EIS assumes that there will be sufficient electrical energy available within the local power grid to provide an adequate source of such energy to the proposed plant. It is COM-7 felt the plant will tax the power grid in mention and will thereby cause an energy shortage to present subscribers within the area.

B. If such power shortages do occur, it will be necessary to add to the electrical generating facilities more generating equipment. It is felt that this added construction will cause higher utility rates ...uding a burden to those on fixed and low incomes. It is also felt that assessment of the proposed CGHO generating plant to be constructed in Lake City, Pa. was not made a part of the draft EIS, either in the area of pollution or utility rates.

4. Aquatic Biota.

A. Because a complex mixture of chemical will be present in the waters of Lake Erie that surround the discharge pipe from the proposed plant, a suitable assessment of the effects on the aquatic biota COM-8 has not been propoerly made. The ingestion of these chemicals by the plants and animals in the discharge region and the possibilty of these plants and animals to alter the effects of these chemicals because of various metabolic systems, and a subsequent deterioration of the already fragile life systems with...n the lake has been completely ignored by the A.D. Little Co. in their draft EIS.

B. A complaint pertaing to actual sampling times must also be COM-9 registered at this time. The actual days of sampling ought to have been extended over a period of two years. This is necessary to come up with a complete assessment of the aquatic biota of Lake Erie.

C. Finally, much of the data dealing with aquatic life seems out-dated. It appears that a previous assessment of Lake Erie was COM-10 used by the A.D. Little Co., rather than one which was gathered entirely by their aquatic team.

5. Alternatives to the proposed action.

A. Chapter six of the draft environmental impact statement is deemed wholly unacceptable. Little mention is made of the COM-11 possibility of constructing a brown-field plant. Also, if the lake front plant were to be built any subsequent closings of older steel making facilities owned by the applicant are not adequately addressed.

6. Irreversible commitments of resources.

A. It has been stated by officials of U.S. Steel, that the life COM-12 span of the Lake front plant would be approximately 40 to 50 years. Little mention is made of many impacts that the closing of such a facility would have on the primary impact areas.

JAMES V. ANTHONY
Chairman - Port Director
15 Parkview Drive
CONNEAUT, OHIO
593-7031

CONNEAUT PORT AUTHORITY

CITY OF CONNEAUT, OHIO
Post Office Box 218
CONNEAUT, OHIO 44030

"The Best Location In The Nation"

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Vice Chair. - Public Relations
413 Dunbar Street
CONNEAUT, OHIO
593-4316

JAMES R. TERRY
811 Buffalo Street
CONNEAUT, OHIO
593-4428
Sec.-Treas.

September 5, 1978

Colonel Daniel Ludwig
District Engineer
Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Reference: Conneaut Port Authority Issues and Concerns Regarding U.S. Steel's Lakefront Plant in Conneaut, Ohio

Dear Sir:

The far reaching effects on the Port of Conneaut of a project of this magnitude are so important that simple approval or disapproval dare not be made without first fully comprehending the consequence of such a decision. Our feeling is that officials representing this city, elected or otherwise, owe first responsibility to its present citizens. This responsibility carries with it accountability and perhaps liability which we must share with the Corps and E.P.A.

No decision should be issued without full understanding of all the possibilities that could arise as a result of either granting or denying the applicant its permit. In all honesty, much of the applicant's research information in the DEIS is beyond our comprehension. In addition, certain necessary data pertaining to the overall impact is lacking or not yet collected. Further more, the E.P.A. has not provided all information which is necessary for a specific decision. This makes it difficult to come to specific conclusions since the specifics themselves are either changing or not available. The Port Authority was not consulted by the applicant or its consulting team with respect to

the base line studies pertaining to port related matters. This also has led to certain minor inaccuracies. This lack of complete information and our sincere belief in our accountability to the present citizens of this community prevent us from rendering either complete approval or disapproval to the applicant. However, we can address ourselves to those issues that the Conneaut Port Authority believes to be of utmost concern to the port and the people of Conneaut, Ohio.

FIRST CONCERN: MAINTENANCE OF WATER QUALITY

One of the most important assets of this community is the readily accessible and seemingly inexhaustible supply of quality fresh water. Around the world today, indeed, literally around the corner, as for example, in Albion, Pennsylvania, one sees the need and value of large supplies of life-sustaining water and the disasters that can occur without it.

We believe this number one asset would be seriously threatened by the nearness of the applicant's planned discharge facilities. Although the prevailing surface currents are southeasterly and generally away from our water treatment facilities, it is common knowledge to anyone living along the lake that where surface currents go in on direction, bottom currents will flow in the opposite direction. This simply means that the bottom currents would bring the pollutants from the discharge westward toward our water plant. Furthermore, even if this were not the case, evidence clearly presented to us by the disposition of drift materials indicates that in times of major storms, winds from the northeast can result in a shift of water from the east side of this community to the west side. A precise plan monitoring the discharge effluent and its accumulation and directing flow has not been addressed in the DEIS. The mear delution of these toxins does not imply that they have dispersed or that they are at a safe level for human consumption. In fact, we would raise the question of a possible build-up of toxic organic chemicals during times of stagnation. It should be emphasized that the present location of the discharge facilities would be less than two miles from our intake water treatment plant.

CPA-1

CPA-2 The DEIS in no way assures us that there would not be an increase in content of toxic material in our drinking water, and a need for more complex filtration equipment. If the latter were the case, who should bear the cost, the citizen of the community, or the applicant who causes the need?

SECOND CONCERN: PRESERVATION OF PRESENT SHORLINE INDUSTRIES

For many years both the recreational industries and the fishing industries flourished in Conneaut. At present there are over 32,000 registered watercraft within an hour drive from Conneaut. We do have fine beaches and excellent sports fishing and attract many tourists from Youngstown, Pittsburgh, Cleveland and other major cities. At one time commercial fishing was a major industry in Conneaut. With the excellent teamwork of the cities and communities along the lake, under the guidance of the E.P.A., progress has been made in cleaning this lake. As a consequence, in the 1970's we have seen a resurgence in fishing and recreation on the lake. We believe it a responsibility to protect these present industries and cannot help but feel that discharge from any additional commercial trade to this new facility could jeopardize these industries.

THIRD CONCERN: PROJECTED INCREASED SHIP TRAFFIC

CPA-3 If the applicant's plan is implemented, the increase in deep water traffic to the harbor would also represent an additional threat of oil spill, increase in vessel ballast discharge, and washing of excess cargo material from the decks of ships. In fact, traffic control alone will be a problem including that of additional small craft. We are also concerned that additional piers or structures would inhibit the present flushing action within our habor and possibly add to the already burdensome sand build-up on the west side of the harbor. This could be especially hazardous since the lower reaches of Conneaut Creek are in a depressed state due to sewage and industrial wastes. All precaution should be taken to insure no added burden is placed on near shore, Conneaut Harbor, [redacted] spawning area for fish species including the important yellow perch.

Very truly yours,

CONNEAUT PORT AUTHORITY

James V. Anthony
Chairman

James R. Terry
Secretary-Treasurer

JVA:JRT:kt

cc: State Department of Natural Resources
cc: Mayor of Conneaut, Ohio

Charles R..Gaukel
37 Sunset Drive
Conneaut, Ohio 44030

Colonel Daniel Ludwig
District Engineer
Department of the Army
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York, 14207

Dear Colonel Ludwig:

The following are my comments regarding the Draft EIS for the proposed U.S. Steel Lakefront Plant. I have included the statement I made at the Ashtabula public hearing. That statement should be considered in conjunction with the specific comments attached. Due to your refusal to extend the review period, I hurried to finish my comments as soon as possible. I would appreciate confirmation from you that they were received early enough to be given consideration in the writing of the Final EIS.

Thank you,

Charles R. Gaukel

STATEMENT GIVEN AT ASHTABULA PUBLIC HEARING

Although my detailed comments on the Draft EIS will be submitted at a later date, there are a number of general observations I wish to make at this time.

CRG-1 First, it is blatently obvious throughout the statement that there was an extreme measure of over-reliance on data submitted by U.S. Steel and the consulting firm it hired. One does not have to question the professional ethics of either U.S.Steel or A.D. Little in order to note that they obviously have a built-in bias toward the proposed project. For the Corps to rely so heavily on data submitted by the applicant and proponent of the project may well be a serious mistake.

A related problem is that throughout the drafting of this statement, there was a severe lack of proper adversary relationships. While U.S. Steel glories in the fact that "everyone worked together", such a situation is not conducive to the true purpose of an EIS. The idea of one big happy family including both regulators and those being regulated is diametrically opposed to the proper roles these groups should be maintaining. I am not questioning anyone's professionalism. The problem is one of attitudes, not ethics.

Contrary to U.S. Steel's public relations poppycock, it is a documented fact that U.S. Steel has one of the worst environmental records in this great nation of ours. This company has raised the tactics of legal obstruction, delay, circumvention, economic blackmail, and blatent noncompliance to an art envied by polluters across the country. A 1977 study by the Council on Economic Priorities listed the eight steel mills that had most improved their environmental

performance, and the eight mills which had deteriorated the most. Of the eight mills which were most improved, not one was owned by U.S. Steel. Of the eight which had deteriorated the most, five were owned by U.S. Steel, including their highly touted Fairless Works. This demonstrates a corporate attitude of not even maintaining those controls they are forced to install. Like I always said, nothing like a "good neighbor!"

It is also well known that because of the policies of the current governor of Ohio, Ohio EPA has been less than vigilant in protecting our environment.

With the past records of U.S. Steel and Ohio EPA, to see other regulatory agencies working hand-in-glove with the sponsor of this project is disconcerting, to say the least.

Even if proper adversary relationships had been maintained, the accuracy of this Draft EIS is open to severe questioning. A recent study by that bible of big business, The Wall Street Journal, concluded that the forecasting abilities of EIS's in general was very poor. This particular statement for example, anticipates little influx of people, largely because it assumes commuting from long distances. Nowhere does the statement mention that if gasoline costs rise significantly, long distance commuting may become a fading memory. If this should occur, and unfortunately if most likely will, the population estimates of the study will be wildly inaccurate. And, due to the nature of the SIMPACT IV model, if population estimates are incorrect, the entire scenario depicted by the model and study are invalid.

CMC-2

A critical factor that is totally ignored by the study is the cyclical nature of the steel industry. This industry, throughout its history, has been plagued with periods of expansion countered by periods of retrogression. These swings have tended to be more extensive than the natural cycles of the economy in general. The effects this would have on the study area are not even investigated.

CMC-3

Also ignored were the problems associated with a one-industry town. If the proposed plant is built, it will dwarf the existing manufacturing base of the local area. Incredibly, no mention of this is even made. In addition to the political power this company would wield locally, there are serious economic factors that need to be explored. For example, a long term strike in the steel industry or in related industries, could have disasterous effects on communities so heavily dependent on this one industry. Modern day planning stresses the need for a diversified industrial base. Yet here we are being urged to give up our present diversified base to become dependent on one industry that has a history of extreme fluctuations.

CMC-4

It is interesting to note that although proponents of the mill constantly stress the resulting increase in jobs, the study itself anticipates litte if any decline in the unemployment rate. The number of employed persons will rise, but so will the number of unemployed persons. Our unemployment problems might very well be worse than it is today. And, if U.S. Steel should close some of their old plants once this

CMC-5

plant is completed, total employment in the steel industry would decline, as this plant is more automated. Instead of creating more jobs, there would in fact be a net loss of jobs, and all we would be doing is transporting the unemployment problems of places like Youngstown to Ashtabula County.

Although the time is too short to go into the specifics of the study, there is one final point that needs to be made. In any project of this magnitude, there will be costs, and there will be benifits. This much is clear to all reasoning people. However, a problem that is often not understood is that the benifits and costs tend to not fall equitably on all segments of the population. While certain groups stand to gain most of the benifits, other people must shoulder a disproportional share of the costs. Obviously, U.S. Steel intends to gain profits, and so do land speculators. Such is their right. But it is the average citizen that will be forced to pay the costs of increased taxes, crime, traffic congestion, poorer roads than we have today, pollution, and most important, loss of the small town life-style we prefer. There are areas in Northeastern Ohio such as Youngstown and Cleveland, that desperately need this type of project. We do not. For all of these reasons, and many more, the draft EIS is totally inadequate, and the permits to allow construction should not be granted. Long ago someone older and no doubt much wiser than myself said " It always seems to go that you don't know what you've got 'till it's gone." That, I believe, is an idea we would do well to remember.

Thank you.

THE FOLLOWING ARE MY SPECIFIC COMMENTS ON THE DRAFT EIS

1.117 and 1.30 [illegible] of these sections refer to the current expansion of Coal and Ore handling facilities at the Conneaut
CRG-6 and Pittsburg Dock Company. These sections seem to make it clear that this expansion is an intergal part of the mill project. If so, why has this work been allowed to proceed?

1.18 The statement that the construction of this plant is unrelated to other plants is totally without substantiation, and
CRG-7 as will be noted later, is in fact contradicted by other sections of the EIS. Once again, the Corps has simply taken the word of the applicant as sufficient evidence. There is in fact, much evidence to the contrary, as will be noted later..

1.223 The discharge pipe as specified is larger than what would be required by the plant as described. And, at a public hearing on May 16, 1977, Mr. Malin of U.S. Steel stated that the Conneaut plant would ultimately be the largest steel
CRG-8 plant in the world. Clearly, U.S. Steel plans much expansion of this plant. Yet, the implications of this are not explored in the EIS. Perhaps this company is using the old but often effective technique of getting "the foot in the door." The market forecast for steel is not favorable to expansion of this magnitude. Obviously, U.S. Steel in contemplating closing down one of its older mills. The implications of this need to be closely examined, not ignored. These implications are national in scope, and thus make a farce of the arbitrarily deterained

study area.

1.377 As noted earlier, the assumed one hundred mile
CRC-9 commuting distance may well be far too great. This throws into question all population estimates.

2.23 This section notes that "The durable goods orientation of the Regional Study Area's economy makes it significantly sensitive to national recessionary periods."
CRC-10 It is difficult to see how a basic steel plant would improve that situation. Table 2-1, as with many other tables, suffers from out-dated data. It is incredible that a study of this size, cost, and importance would rely on three year old data.

3.1-3.14 This important chapter on the relationship between the proposed plant and land-use plans is extremely general, speculative,and unsupported by documentation. (I might note here that these are three problems found throughout the study.) In fact, this action may well be in direct violation of proper lan-use planning. I quote from Great
CRC-11 Lakes Basin Region Summary Report for the 1975 National Assessment of Water and Related Land Resources, prepared by the Great Lakes Basin Commision, April, 1977. (The Department of the Army is a member of this commission.) On page 107, the report states: "The Erie-Chatauqua complex where unique vineyards along Lake Erie and the Presque Isle recreation area are worthy of special protection from encroachment by housing, business, and intensive uses." (Emphasis added). In fact, the "Erie-Chatauqua complex" extends far

to the west of Erie, reaching the fringe area of Cleveland. This entire irreplacable areawould be destroyed by the proposed plant and its primary and secondary effects.

CHAPTER FOUR

Before reviewing Chapter Four, the nature of the SIMPACT IV model should be noted. It is basically an accounting model, which takes a number of imputs, multiplies these imputs by a predetermined set of factors, and then provides
CRC-12 the results as outputs. Thus, not only does the model give only general and superficial results, more importantly, these results are a function of the imputs and the multiplying factors. Both imputs and multiplying factors were predetermined by the applicants consultant, and both are open to severe questioning.

It should also be noted that the most important imput is the population estimates of the consulting firm. If these estimates are wrong, the entire scenario predicted is invalid. A great number of groups and individuals have already noted that these estimates are grosly under what is most likely to occur. Obviously, as the applicant encoun-
CRC-13 tered resistance among local citizens who feared massive growth, the decision was made to bias the study by using very low population growth figures. One wonders what figures would have been presented if the applicant had found the entire area tc be composed of individuals with the typical "growth at any cost" mind-set found among chamber of commerce types.

Since from this point on, the study has little or no validity, I am tempted not to continue with comments, but I will, for the applicant has reaped so much PR in the fact that the study is so lengthy. As is well know, validity is not a function of length, for sometimes the longest books contain the fewest truths.

CRG-14 4.21 It is well known throughout the planning field, that employment multipliers are unstable, and thus their validity is less than complete, and growth estimates are subject to very large margins of error.[1]

This section also confesses that "there is not a large enough construction labor force available in the Regional Study Area to meet Lakefront Plant constuction needs, therefore, a significant percentage of the construction jobs is expected to be filled by workers from outside the Regional Study Area." I quote from Michael Conroy, The Challenge of Urban Economic Development. "To the extent that the increased labor needs are met by in-migration of new labor, the ratio of capital to labor will rise less rapidly, and wages and income will rise less rapidly."[2]

CRG-15 4.34 The comparison between this proposed facility and Lordstown is without significant documentation, justification, and as noted by others, because of the vast differences between the two areas, is absurd.

CRG-16 4.42 Table 4-13 is most interesting. The baseline unemployment rate for 1979 (7.5%) appears high, barring a major

recession. One does note however, that even this study predicts little decline in the unemployment rate as a result of the proposed project. Obviously, even the applicant admits (but does not publicise), that this propcsed plant is not the panacea for unemployment it has been touted to be. One also notes that these figures are for the Regional Study Area, which includes heavily industrialized areas (Erie and Youngstwon), which have unemployment problems far surpassing those of the Local Study Area. Obviously, this project would provide little help for local areas, it would merely transfer the problem from the locales where it now exists to the Local Study Area.

CRG-17 4.64 This section notes that area schools will face an influx of students. Excepting the area of vocational students, what is not addressed is whether these students will have different educational needs as compared to the students now in area schools. For example, children of transient parents often have special needs which the schools must meet. This potential problem is ignored.

CRG-18 4.44 The section on impact on law enforcement is a typical example of why this study has so many shortfalls. To assess the projected police requirement, essentially all that was done was to extrapolate the current level of police protection to the projected level of population growth. Thus, according to the study, if "P" number of police now serve "X" amount of population, then "P" number of police should serve "X" amount of population. In other words, the ration of police to population remains the roughly constant.

Obviously, what is ignored is the fact that there are not only likely to be quantitative increases in crime, but a number of qualitative changes in the type of criminal activities with which law enforcement agencies must deal, [illegible] The local areas today are not only low crime areas, but those crimes which occur tend to be of the less serious variety. The study ignores the potential problems of dramatic increases in serious crime, and the extra police and extra training of officers this would require. Almost all boom areas have experienced mammoth increases in such crimes as prostitution, gambling, rape, drug trafficing, murder, armed robbery, and burglary. The obvious attraction this influx of money would have for organized crime is not dealt with. These types of crime are not often experienced todsy by our local police. Thus, the section on law enforcement is without any validity whatsoever.

4.215 At least this section notes that the estimates of impacts on the cost of social services may be wildly inaccurate.

4.233 The expectations of tax reductions are so ludicrous as to be laughable, if this was not so serious a matter. These expectations hinge on two factors, the extremely low population estimates, and an implicitly assumed lack of inflation. CRC-19 The first assumption has already been dealt with. As for the second, when one realises that the government expenditures required are figured in 1975 dollars, the proported accuracy of this study is idiotic. One does not have to be an economist to know what was happend to the

cost of living since 1975. Thus, the cost estimates for such things as sewers, water lines, schools, etc. are absurdly low, and have no resemblance to reality.

4.308 As is noted in 4,307 and mentioned above, the costs for sewer construction is figured in 1975 dollars, therefore this section is entirely without value.

4.357 The section on traffic and highway impacts has two main flaws. First, the loss of tax revenues as new highways are built is not studied. Second, the increased costs of CRC-20 maintainance is not estimated. Road maintainance is extremely costly in this area due to harsh winters, and with the addition of huge amounts of new traffic, will escalate severely. This also makes the tax reduction scenario even harder to justify.

4.362 The section on electricity ignores the problems associated with failure to use recycled materials. CRC-21 Such materials consume far less electricty than what is required to make the same amount of steel from raw materials.

4.414 The section on the impact on air quality standards has several shortcomings. First the pollution from this plant in conjunction with the proposed COHO plant were not studied. Second, even if this plant is able to meet ambient CRC-22 air quality standards, construction/operation of this plant may preclude further industrial development because of PSD requirements. If this should occur, it would intensify the problems of an undiverisified industrial base.

4.494 The destruction of Turkey Creek is unacceptable. The fact that the applicant held to this position only confirms this company's environmental arrogance. The statement that the applicant does not expect the impacts of construction on Raccoon Creek and Conneaut Creek to be significant is without documentation and/or justification, and therefore is without any value.

CRG-23

4.501 The applicant's failure to consider the possibility of abnormal events during construction is further evidence of the severe lack of professionalism exibited in this study.

CRG-24

4.503 The applicant's acknowledgement of the discharge of potentially harmful chemicals into the lake is unacceptable. In view of the condition of Lake Erie and its use for fishing, water supply, and primary contact recreation, dilution is no solution to pollution. This study also lacks proper analysis of potentional impacts on the water supply of the City of Conneaut in the event of abnormal events, such as a breakdown of control devices coupled with a northeast wind. This section also notes in passing that the plant will not meet EPA requirements for ammonia. At a later point (4.723) it is noted that sublethal levels of ammonia may be exceeded. This is unacceptable.

CRG-25

4.506 The estimation that worst case conditions would occur only once per year is without documentation/justification and is thus without validity.

CRG-26

4.537 Notes that Ohio standards for phenols and total dissolved solids will not be met.

CRG-27

4.552 This section notes that a number of abnormal events may well occur, yet incredibly that applicant details no plans whatsoever for handling these potential crises.

CRG-28

4.585 This section states that"Roof run-off will be discharged untreated through the main outfall to Lake Erie." Since this run-off may well accumulate high levels of pollutants, this method is unacceptable, and another example of this company's environmental disregard.

CRG-29

4.592 The potential impacts of secondary development on water quality are not sufficiently addressed. The baseline problems of inadequate water supply in Northwestern PA would be intensified, yet are not even mentioned.

CRG-30

4.641 This section notes that sulfate 3 concentrations may exceed levels hazardous to health. The study fails to consider the financial and social costs, this would place on the local communities.

CRG-31

4.648 This section confesses that there are no data regarding the impact of particulate emissions on terrestial fauna or domestic livestock. This admission of ignorance on the part of the applicant, even if due to "the state of the art", should not be accepted as meeting requirements for issuance of permits. If construction/operation is allowed, and negative effects are later found, it may well be too late.

CRG-32

4.682 This section notes that more dredging will be required, and that this will result in lower oxygen levels. This study fails to examine the effects of this in detail. CRC-33 And, who will this dredging be done by, the Army Corps of Engineers? If so, what will be the costs to the American taxpayer? And, where will be dredged material be placed?

4.698 Once again, the lack of adequate data in this section renders if wortnless.

5.1 This section again lacks substantive documentation CRC-34 to support the statements made. Without such documentation, such statements have no place in an EIS.

5.8/5.9/5.10 These section note that school tax increases will be required, seemingly in contradiction to earlier CRC-35 statements about tax reductions. The study fails to consider the past reluctance of the local public to approve such levies.

5.14 The compensatory measures for the loss of Turkey Creek CRC-36 are unacceptable.

5.17 The study notes that increased ship traffic will seriously impair the recreational value of the harbor. How- CRC-37 ever, the study ignores air and water pollution these ships would cause. The study also fails to explore possible economic implications of reduced tourism as air and water quality deteriorates. Not only baseline but potential future tourism should be studied.

5.19 The recreation mitigative measures spoken of all CRC-38 cost money, yet the study does not indicate where the funds would come from. Higher taxes perhaps?

5.41 This section notes that often funding may not be CRC-39 available until the need is critical. It provides no method of overcoming this problem.

5.52 This section fails to address itself to the negative impact increased traffic would have on road conditions. In addition, forces promoting the extension of Route Two CRC-40 into Conneaut have already used the proposed mill as justification for this venture. The study should address the problems this might cause.

5.65 The possibility of government funds to be used to preserve vital faraland would seem to be more a pipe dream than a reality. And, the decrease in air quality resulting from the mill will result in a decrease in the value of the land for agricultural purposes.

5.69 This section states that erosion "could be mitigated." CRC-41 Significantly, the applicant has not stated that it will be mitigated.

5.72 This section is so critical it calls into question CRC-42 all aspects of the study which cite benifits from the proposed project. I urge the Corps to note this section carefully. It clearly states: "All emission rates are expected to be within allowed Class II non-degradation limits and will

occur throughout the projected 30 year life of the facility." It is incredible that a plant which will cause such massive disruption will provide so-called economic benifits for only 30 years. This fact alone calls for the denial of permits. At the very least, the final EIS must address problems to be associated with the decommisioning of the plant. What will become of Conneaut then?

CRG-43 5.73 This section notes that data is not available to predict impacts on vegitation. In other words, they "just don't know" what will happen. No work should be allowed to proceed until such time as "they do know".

CRG-44 5.74 This section notes possible health hazards from air pollution. More specific, detailed data is necessary.

CRG-45 5.83 This section notes that U.S. Steel intends to use dilution as a major means of "solving" the problems of waste water. This is unacceptable. The quality of water discharged must be at least as high as the quality of intake water. As the applicant will be using water that belongs to the public, user charges should be established.

CRG-46 5.89 This section, while it notes many problems, lacks specific data, and thus is without value.

CRG-47 5.102 - 5.105 These sections note that harm will be done to both human and plant health as a result of air pollution. Incredibly, the study advocates monitering as the primary

method of mitigation. By the time one monitors and discovers the problems, the damage has been done. Once again, the proposal is unacceptable.

CRG-48 5.116 This setion notes that no acceptable mitigation is given for the impacts of pier construction and dredging.

CRG-49 5.122 This section notes that some heavy metals and trace elements may accumulate in the tissues of aquatic organisms. As this might well result in the loss of Lake Erie as a fishery, and as Lake Erie provides more fish than any other of the Great Lakes, much more study is needed on this point. Until this matter is completely investigated, the issuance of permits cannot even be considered.

CRG-50 5.126 All of the sections dealing with the discharge pipe fail to address themselves to the question of why such a large discharge pipe is being used. Obviously, future expansion is already anticipated. Such expansion must be addressed in the study, or such a discharge pipe should not be allowed.

CRG-51 5.128 Once again, detailed data is not provided, therefore the section is without validity.

CRG-52 6.2 This section states that not building this facility would increase dependence on older plants. Yet the applicant has repeatedly claimed in public that the construction of this plant is not related to the operation of its other plants. One must congratulate the applicant, for this com-

pany has a remarkable ability to speak out of both sides of the mouth at the same time. Obviously, the applicant has been less than honest with the Corps, or the public, or both. Little wonder that the applicant's credibility is so low. This lack of honesty casts doubts on the accuracy of any statements and/or promises made by the applicant.

ALTERNATIVE SITES

The lack of data in these sections indicates the applicant had no interest in exploring other sites. This is a violation of the EIS requirements. Not only must the applicant be required to consider other sites, it must do so in detail. And, when comparing costs, total costs, including the social costs traditionally borne by the public, must be included. As other "brownfield" areas already have the infrastructure that is needed, total costs might well be lower at an alternative site. Construction of this plant in this area is also contrary to the policy of encouraging industrial growth in urban areas announced by Mr. Carter, President of the United States. Construction here would encourage further deterioration of the metropolitan areas of Northeastern Ohio. If the company continues to insist on the Conneaut location, at the very least the applicant must be forced to assume all costs associated with the development resulting from construction/operation of the proposed facility. It is the very least that a "good neighbor" would do.

6.56 Includes no data on tax losses as a result of highway construction.

CMC-54

6.87 The fact that moving the discharge pipe further off shore might destroy Raccoon Creek and Park is further evidence of the poor quality of the discharge water. As stated before, such environmental destruction is unacceptable.

It is clear then, that this Draft EIS is a collection of misinformation and unsubstantiated assumptions. It is composed largely of outdated, insufficient, or non-existant data. What is even more disconcerting is the range of problems the study fails to address. Despite its length, it is in no way comprehensive. It grossly underestimates, and in fact attempts to hide, the social, economic, political, and environmental havoc and destruction that would be wrought by this monstrosity. The problems of this study are so critical in both quantitative and qualitative terms, i.e., they are so serious and so numerous, that commencing a new study would be preferable to using this worthless document as the basis for the Final EIS. Therefore, as I stated earlier, the Draft EIS is unacceptable, and the permits should not be granted.

Thank you,

Charles R. Gaukel

FOOTNOTES

1. Conroy, Michael, The Challenge of Urban Economic Development, D.C. Heath and Company, Lexington, Mass., 1975, p.42.

2. Ibid., p. 45.

Crawford County Sportsmen's Council, Inc.

Northwest Division

Pennsylvania Federation of Sportsmen's Clubs, Inc.
Meadville, Pa. 16335
Sept. 6, 1978

U. S. Army Corps of Engineers
Buffalo Division
Buffalo, N.Y.
Dear Sirs. -

The Crawford County Sportsmen's Council Inc have gone on record as being definitely opposed to the building of the U. S. Steel Plant along Lake Erie in Pennsylvania and Ohio near Erie, Pa. and Conneaut, Ohio.

CSC-1 We feel it would be detrimental to our natural resources of our game animals and game birds in the area of the proposed U. S. Steel Mill.

Sincerely yours
Anthony J. Thomas, Secretary
Crawford County Sportsmen's Council, Inc.

Copy
David Hayes
R. Budd Dwyer

CRAWFORD COUNTY PLANNING COMMISSION

COURTHOUSE, MEADVILLE, PENNSYLVANIA 16335
TELEPHONE (814) 336-1151 Ext. 61

CCPC

PLANNING DIRECTOR - EDWARD P. EDINGER
ASSOCIATE PLANNER - FRANK A. CIAPOCHI

August 14, 1978

Colonel Daniel D. Ludwig, District Engineer
DEPARTMENT OF THE ARMY
Buffalo District - Corps of Engineers
1176 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The Crawford County Planning Commission at its regular meeting on July 21, 1978 approved for submission to your office the following series of comments on the Draft Environmental Impact Statement for the Proposed Lake Front Steel Mill, Conneaut, Ohio.

The Statement (DEIS) is impressive in the volume of material presented and in the depth the analyses provided in many important areas. In general the Commission believes the DEIS is very forthright and factual concerning the impacts that will occur in the physical environment, i.e. emissions into the air, discharges into the water, etc., but is not candid, understates and downplays the seriousness and extent of the impacts that will occur in the social environment, the so-called secondary impacts. We accept the fact that the siting of this facility is certain to be a wrenching experience on the physical and social environment. Realizing that the strength of our County's economy is in the manufacturing industry, and espousing the growth of this industry as a County objective, we support the construction of the proposed steel making complex as contributing to the expansion of our economy, assuming that reasonable physical standards (land, air and water related), as administered by State and Federal technicians, are adhered to. The Commission could not support the construction of the steel mill under circumstances where air emission standards are so permissive as to cause "acid rains" or the formation of atmospheric ozone such that these noxious effects would cause significant damage to the agricultural economy in nearby areas. Nor does the Commission support the steel mill construction at the expense of contributing chemical pollutants to Lake Erie which will cause significant and permanent harm to this resource.

The Commission would use this statement as a means to take a number of exceptions to conclusions established in the DEIS relative to the secondary impact phenomena, particularly as theyare perceived to affect Crawford County. We believe the basis for many of these con-

clusions are very subjective in nature, and that many secondary impact developments may not be as described in the DEIS. Assuming the steel mill is built we do not believe, for example, that the DEIS can be used as a sure guide for prioritization decisions by the State and Federal funding agencies when they are requested to fund community development and services programs in future years.

Employment and Population

Knowing full well the elusive character of population forecasts and respecting the volume and thoroughness of the DEIS work we submit that our analyses are different. We point out the following assumptions and conclusions in the DEIS which we question:

CWP-1

1. The DEIS projects total baseline population in the Pennsylvania Regional Study Area to increase from 356,600 in 1975 to 396,400 in 1990. This is based on an average annual growth rate of .7%. By using analyses done by the U. S. Bureau of the Census in their Current Population Reports series for the period 1970-75 one could assume a stronger growth rate in the Pennsylvania Regional Study Area. This stronger baseline growth rate would be based on the average annual growth rate between the years 1970 and 1975 and calculates to .87%. Using this rate there would be an increase in total population from 360,000 in 1975 (Bureau of Census figure) to 406,800 in 1990. This higher figure constitutes a baseline population in the Pennsylvania Regional Study Area 10,400 higher than given in the DEIS. Modifications in the average annual growth rate to reflect the more conservative figure of 396,400 as explained on pages 2-147 and 2-150 of the DEIS are not convincingly explained in our view. It would appear that should the steel mill be built a growth climate will be created in the study area and a higher baseline growth rate would have been a safer assumption to make.

CWP-2

2. Construction workers will be occupied at the plant site from 1980 to 1987 with one year of no activity; this is a 7 year period. The DEIS states approximately 1000 of these workers, over the course of the project, will move into the area with their families. It also assumes that all of these "movers" will vanish from the study area by 1990. We think this unlikely.

CWP-3

3. We believe that the number of jobs and the population derived therefrom predicted to be generated from the 8500 basic jobs expected in the steel complex are set too low. The DEIS predicts 4,900 new related jobs (secondary impact jobs) to be generated as a result of the basic 8500 jobs; it totals the new jobs expected in the Regional Impact Area in 1990 at 13,400 (figure includes the 8500) - after all of the construction workers are "gone." Charles M. Tiebout in his work, The Community Economic Base Study, states that "the simplest assumption is that over the long run the proportion of basic (steel complex) and non basic (related) jobs will remain about the same. Hence an increase in the number of basic jobs will eventually produce a proportional increase in non basic jobs." In 1974 in the Regional Study Area, 45% of the employment was in manufacturing, agriculture, mining and construction activity and 55% was in non-manufacturing activity, service related work (Table 2-5 of the DEIS). This means that for every "basic" job there were 1.2 "non basic", service related jobs. By using only the factor of 1.0, 8500 steel complex jobs would generate another 8500 jobs for a total of 17,000 jobs. One could say that the term "long run" makes the difference, and projections to the year 1990 would not be considered long run in this case. However, in our view the fact remains the steel complex portends more secondary job growth than the DEIS implies.

CWP-4

4. Examining the DEIS for a total of new residents entering the Regional Study Area as a result of the steel complex, both primary and secondary job related, we note this figure to be 15,800. We believe this to be entirely too low. We suggest the following assumptions and calculations would be realistic.

From the analysis outlined in Item 3 above the steel complex can be expected to generate 17,000 new jobs.

A reasonable assumption can be that area-wide unemployment rates would parallel rates in similar regional economies throughout the country and consequently have no great affect on the amount of in-migrant workers.

The observation shall be made that resident employed workers taking new jobs in the steel complex or in secondary employment situations created by the steel complex will be replaced in their old jobs by others of the resident population or by in-migrants.

Based on labor force participation rates as established in the DEIS for wives and children of workers (situations where 2 or more workers in a family are in the primary and secondary labor force) in an expected 17,000 new jobs the 17,000 worker figure can be assumed to be reduced by 25%. The resultant figure is 12,750. This figure represents additional workers in the regional labor force who can be considered representative of new households.

Based again on a DEIS figure of 3.5 persons per household the additional regional population (over the baseline figure) is computed at 44,600.

We suggest that this figure of 44,600 is logical as representing the new residents entering the Regional Study Area by 1990 and through the next 3 to 5 years as a resultant of the steel complex - rather than the 15,800 figure.

Assuming a state split in accommodating the new residents of 40% in Ohio and 60% in Pennsylvania rather than the split established in the DEIS of 60% Ohio and 40% Pennsylvania, the steel complex and related population in the Pennsylvania Regional Area in 1990 and thereabouts would be 37,200.

Accordingly as a result of these population analyses we believe the socio-economic impacts of the steel mill complex will be greater than declared for the Regional Study Area and for the Pennsylvania Regional Study Area. The greater impacts extend to all areas of community development, to the needs for public sewer and water systems, police and fire protection and on and on, - including areas where the public and private sectors interface such as in housing construction and the provision of medical services.

Coastal Communities Scenario

The DEIS predicts that the vast majority of the settlement impact resulting from the steel complex will occur in what are called the coastal communities, the first tier of municipalities south of Lake Erie from Millcreek Township in the northeast to Fairview Township in the southwest. Approximately 90% of the settlement impacts are predicted in this area. This assumption conveniently enabled the DEIS to concentrate its detailed and voluminous analyses in a very limited area, accordingly making the task easier. The consequence of this was that many communities in the Regional Study Area, many of them rather close to the steel complex site, were not analyzed. We find the coastal communities settlement concept an interesting one; but we think it is an over-simplication of the issue. We do not believe as much as 90% of the population impacts will occur in this area. This scenario ignores the following facts:

CMP-5

1. Most of the coastal communities' area does not have public sewage service. Vast expenditures and considerable time will be needed to sewer much of this land. For sound development public sewage service is a "must" in this area because of soil conditions. Federal monies for sewage system construction are chiefly keyed to existing settlements with water quality problems.

2. Public water service is lacking in much of this area particularly in Erie County.

3. It is in the coastal communities that the largest concentration of good agricultural soils exist. Agricultural uses, including fruit and vegetable production, are successful in this area particularly along the lake front.

4. This area is transected by railroad lines which will create serious circulation problems in the event of high density settlements.

5. Land use regulations and attitudes towards urbanization currently in many of these communities are not supportive of the settlements proposed in the DEIS.

6. Land values in the coastal communities are higher normally than in areas south of the steel complex site. The cost of new housing is extremely high; it is becoming more doubtful that the average American family can afford new housing without some subsidy; we are drifting towards the "European situation." High land costs may be an extremely important deterrent to new housing construction.

It is our view that settlement patterns are more likely to radiate from the steel complex site along major highways to established communities (and their environs) having sewer and water infrastructure and having recognizable amenities. Distances of up to 35 miles, to such communities, as mentioned in the DEIS, are not an unreasonable commute. Among the communities in Pennsylvania which meet these standards and which are not in the coastal community area are Albion, Edinboro, Springboro-Conneautville, and Linesville. Waterford, Cambridge Springs, Saegertown, Meadville, and Conneaut Lake, and the Pymatuning communities are all established settlements within one hour of the steel complex site. None of these communities received significant mention in the DEIS.

Northwest Pennsylvania Futures Committee

Whatever settlement patterns develop as a result of the construction of a steel complex it appears clear there will be a considerable need in many municipalities for funds to build community infrastructure and provide needed services. The expense of the components of communal living today are higher than ever so much so that all local governments look to the State and Federal governments for substantial funding aid. This phenomenum of "dependence" is discussed vividly in an article in ASPO's Planning magazine of July 1978 where it was pointed out that in 1957 Federal aid for a group of large cities equalled 2.6% of their local revenues, this figure jumping to 50% in 1977 while total aid from outside sources in 1978, for these same cities, was 85% of the local revenue in 1978. There will inevitably be severe competition for State and Federal monies as the steel complex construction moves ahead. How will funding decisions be made? We feel this issue should have been addressed in some manner in the DEIS; to our knowledge it wasn't. The State and local government leaders in Pennsylvania have attempted to deal with this by organizing the Northwest Pennsylvania Futures Committee. One of the important objectives of this organization is to establish a consensus on a futures plan for the impact area. Such a plan, assuming it is developed, could be of inestimable value in providing direction for local State and Federal officials cast in the role of making decisions on public expenditures necessary to build good communities. This issue should have been addressed in the DEIS. It could have been addressed in relation to the Futures Committee which was organized in the spring of 1977.

CMP-6

CMP-7

Local Municipal Management Capability

In the Crawford County impact area, except for the City of Meadville, all municipalities are relatively small and are what one might call rural in nature; this includes both the townships and the boroughs. We do not believe the DEIS assesses the seriousness of the difficulties these municipalities have in handling affairs of municipal management. They find it impossible, individually, to afford qualified staff to deal with community planning programs, building and housing code administration, zoning enforcement, regulating on-lot sewage matters, maintenance of public utility systems and with the initiations of applications for State and Federal loans and grants. Should secondary growth impacts reach these municipalities new mechanisms will be needed to enable these communities to cope with these challenges. Intermunicipal and/or county administrative structures would seem to be ways through which these problems can be overcome. Currently on-lot sewage administration is a function of local government although the standards for this program are established by the State. We believe the administration of this

CMP-8

program, so important to sound community development, is very uneven in our County.

New Housing Construction

The DEIS in Volume 3 is quite honest about pointing out possible difficult impacts relative to the construction of new housing. Regional Study Area builders are not accustomed to large scale construction. There will very likely be shortages, from time to time, in the construction labor force available for housing production. Sewer and
CWF-9 water system infrastructure is not in place in many areas which the DEIS believes should receive heavy settlement impacts. We would also point out that, unlike the 1950's where a Levittown was possible in the shadows of the Fairless Steel Works near Philadelphia, our current economy will make it, in our view, impossible to create housing of that quality at costs people can afford without considerable State and Federal subsidies. We see no mechanism available for the delivery of these subsidies.

Secondary Impact Population Split Between Ohio and Pennsylvania

As mentioned previously the population split identified in the DEIS between the two states is 60% Ohio, 40% Pennsylvania. With all due respect to the State of Ohio we believe it will be the reverse of this for the following reasons:

CWF-10
1. Educational services are better in Pennsylvania. School boards in the Ohio Region 1 Study Area have been unable to get public support for needed school facility construction.

2. There are more municipalities with the infrastructure necessary to support well developed, new residential neighborhoods in Pennsylvania. There are more cultural and recreational opportunities in the urbanized Pennsylvania municipalities and their environs.

3. Although the cost of living in Pennsylvania is somewhat higher than in Ohio, the delivery of services is, in general, better.

Use Of The Simpact Model

CWF-11 The secondary impacts infrastructure and service needs derived from the steel complex were determined through the Simpact Model. This model is driven by the population figures assigned to it. Impacts are quantified by a "straight out" multiplier computation. We would point out that, while being an extremely useful tool in quantifying impacts, it is utterly dependent on the input population figures, and it is incapable of dealing with "feedback" situations, situations where "growth begets growth."

Vocational Education

CWF-12 Currently there are 4 vocational high schools serving the Principal Impact Area in Erie, Crawford and Ashtabula Counties, one in the City of Erie serving the City's youth; one in Summit Township in Erie County serving central and western Erie County, one in the City of Meadville serving all of Crawford County and one in Ashtabula County serving that County. Pennsylvania and Ohio do not require local school districts

to provide vocational education, but these schools have been eminently successful, so much so that each of them is currently over capacity. The DEIS indicates that the Erie and Ashtabula County vocational schools currently could each serve 1500 additional students in their jurisdictional area if they had the capacity. They do not have this capacity. In Erie County plans are being made to expand in order to accommodate an additional 800 students. In Ashtabula County bond issues to expand the vocational schools' capacity have been turned down by the electorate. In Crawford County the vocational high school year after year must turn down applicants: its present capacity is 900 students. Current (baseline) estimates indicate that if the facilities were in place or if the present facility could be used more extensively on a shift basis, another 300 students soon would be enrolled in vocational education in Crawford County. If the Regional Study Area truely is to serve its people, providing a labor force which will enable it to maximize potential secondary impacts deriving from the steel complex we believe vocational education opportunities must be greatly expanded by whatever means; it is hardly an optional issue given our present social and economic affairs.

Police Protection

CWF-13 The DEIS through the Simpact modeling process declares that a certain amount of population should have one policeman to service it and applies a multiplication process to determine the additional policeman needed to handle increments of secondary impact population. This is a workable measure, where there is already a local police protection structure in place. However, in our County's rural municipalities, dependent as they are on State Police barrack's service support, this is not a satisfactory solution to measuring police service needs. Once the "minimum threshold of need" is crossed for rural communities and they acquire the need for that first policemen it is unlikely that he can work effectively out of the State Police barracks. New police service structures need to be developed. This issue is not addressed in the DEIS.

Impacts On State Route 6N

CWF-14 Traffic loads to and from the plant site were analyzed for the system of roads which insures the site's connection to Interstate 90. However, because I-90 parallels the Lake shore which is positioned northeasterly from the plant site, this interstate highway does not distribute traffic conveniently in a direct easterly direction; State Route 6N handles this easterly direction and in fact makes the most reasonable connection from I-90 at the plant site to Interstate 79 and southward traffic movements in Pennsylvania. Our view is that Route 6N east of I-90 is a significant highway in the traffic network related to the plant site yet it was not dealt with in the DEIS; it is a 2-lane facility and its level of service will fall greatly if it receives severe impacts.

Principal Impact Area Delineation In Crawford County

CWF-15 We submit that the Principal Impact Area delineation for Crawford County was poorly drawn. The following municipalities should have been included within this study area: Venango and Cambridge Townships, Cambridge Springs and Saegertown Boroughs, Vernon Township and the City of Meadville. Venango and Cambridge Townships and Cambridge Springs have ready access to State Route 6N via State Route 99 and U. S. Route 19. Saegertown

has direct access to Interstate 79 via the Saegertown Interchange in Hayfield Township. Vernon Township and Meadville are easily accessible via the Meadville Interchange in Vernon Township. We realize that these observations at this late date probably do not warrant changing the many calculations based on the Principal Study Area delineation. But it needs to be pointed out that the impact area boundary used served to reduce certain impacts in Crawford County especially when one realizes that it is possible, for example, to leave downtown Meadville and in 55 to 60 minutes one's automobile is positioned in downtown Conneaut, Ohio.

Sincerely,

Edward P. Edinger

Edward P. Edinger
Planning Director

ljm

cc: Board of Crawford County Commissioners
Northwest Pennsylvania Futures Committee
Tom Daley, State Coordinator for Ohio

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE Room 522, Federal Building
200 North High Street, Columbus, Ohio 43215

September 7, 1978

Colonel Daniel D. Ludwig
ATTENTION: Regulatory Functions Branch
U.S. Army Engineer District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The Draft Environmental Impact Statement for the proposed U.S. Steel Corporating Lakefront Steel Plant, Conneaut, Ohio, was referred to the Ohio State Conservationist, U.S.D.A. Soil Conservation Service, Columbus, Ohio, for review and comment.

We have reviewed the statement and wish to offer the following comments for the plant area located in Ohio:

Prime and unique farmland found at the plant site was discussed in our letter dated July 18, 1978, which was addressed to you. In this letter we stated that an estimated seventy percent of the area is classified as prime farmland.

DA-1 The proposed 16,000 foot diversion channel to replace the downstream portion of Turkey Creek would be better understood if a profile showing the planned grade was included in this report. Also, the grade elevations of intersecting channels should be shown. Will all tributary channels be provided an adequate outlet? A drain pipe (tile) installed in the old streambed of a size to carry needed drainage would be preferred over gravel bedding.

DA-2 An erosion control plan conforming to the requirements of the Commonwealth of Pennsylvania (Ohio has no such requirements) will be developed for the entire site prior to the commencement of construction. Will the on-site inspection by the Erie County Health Department include the Ohio portion? Ohio representation for on-site reviews and inspections could be provided.

DA-3 A discussion of soils of the area is included in the section on Site Geology. In Table 2-309 under Soil Series, some words are misspelled. Correct Canadea to Caneadea; and Clavarack to Claverack. In footnote (3) the Soil Series are listed by county - Ashtabula and Erie. The word Claverack is again misspelled. Not all the Soil Series shown above in the Table are included in the listing for the two counties. Some are in both counties. The word Conotton is repeated three times in the listing for Erie County.

DA-4 In our copy of this report, much of the left side of Table 2-310 was not legible.

DA-5 The last sentence of Section 2.549 on page 2-702 should be corrected to read "...Conneaut soil profile is typically silt loam."

DA-6 Tables 4-244 through 4-251 should show a reference to the map on page 4-701 (Figure 4-100).

DA-7 Seeding cleared areas to control erosion is discussed in Section 5.96, page 5-36. Tall fescue is a preferred grass in seedings for erosion control. It can be seeded alone or in a mixture with other grasses and/or legumes.

We appreciate the opportunity to review and comment on this proposed project.

Sincerely,

Robert E. Quillian
State Conservationist

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE Room 522, Federal Building
200 North High Street, Columbus, Ohio 43215

July 18, 1978

Colonel Daniel D. Ludwig, P.E.
Corps of Engineers
Department of the Army
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This is in response to your request for information concerning prime and unique farmland in an area proposed for the construction of an iron and steel manufacturing complex near Conneaut, Ashtabula County, Ohio. The information provided in this letter applies only to the Ohio portion of the construction site.

Important farmland maps showing the location of prime and unique farmland in Ashtabula County have not yet been published. However, detailed soils maps for this county were published in 1973. From the soils data, aerial photos, and observations made during an onsite check, our field personnel headquartered in Jefferson, Ohio, provided the following information.

An estimated seventy percent of the construction site is classified as prime farmland. An aerial photo taken 20 years ago does not show any cultivated crops being grown in the area.

We are not aware of any unique farmlands in the project area. If we can be of further assistance, please let us know.

Sincerely,

Robert E. Quillian
State Conservationist

7 SEPT 78

To- Colonel Daniel D Lyons (Through)
District Engineer, Buffalo District
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Subject- Draft Environmental Impact Statement (Reference U.S. Steel)

In reviewing the Draft Environmental Impact Statement concerning the intake and discharge lines, it is noted that the intake line is buried below the bottom of the lake where it is protected from the sudden storms of Lake Erie, from possible damage from the surface of the lake (wave action etc) and from ice in the winter, etc. This intake line is, of course, vital to the operation of the proposed U.S. Steel plants.

It is also noted that the discharge line is located above the bottom of the lake for a great deal of its length. Thus it is subject to damage from winds, storms, ice etc. The discharge

DK-1

7 SEPT 78
(Page 2)

line, if cracked & leaking, would most likely not effect the operation of the U.S. Steel Plant.

→ Thus it would appear that the better placement of the pipe would be buried below the bottom of the lake, and therefore both lines should be installed in that way. Technically it must be feasible since the intake line is proposed that way.

Thus the final draft should address this concern, which could greatly effect the decision. Otherwise for it isn't addressed adequate in the preliminary draft.

Sincerely yours,
D. Koppelman
326 Beverly Dr
Erie, PA 16505

PS- Please send me a copy of your official reply for the Final Impact Statement.
Thank You,

7 SEPT 78
(THURSDAY)

TO- COLONEL DANIEL D. LUDWIG
DISTRICT ENGINEER, BUFFALO DISTRICT
U.S. ARMY CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

SUBJECT- COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED US STEEL PLANT.

AS STATED BEFORE, I WELCOME U.S. STEEL TO ERIE & ERIE COUNTY, PA; BUT INSIST THAT THE ENVIRONMENT BE PROTECTED FOR ALL AND NOT BE ALLOWED TO BE HOPELESSLY DETERIORATED.

THEREFORE IT IS SUGGESTED THAT THE DISCHARGE LOCATION OF DISCHARGE PIPE DK-2 BE LOCATED SO THAT THE DISCHARGED WASTEWATER IS DEFINITELY CARRIED TO THE CENTER OF THE LAKE FOR BETTER DILUTION - AND TO LESSEN THE EFFECT ON THE SHORELINES & PRESQUE ISLE STATE PARK.

THE FACT THAT STRONG CURRENTS FLOWING TO THE CENTER OF THE LAKE EXIST ARE KNOWN IN THE AREA NEAR THE OHIO/PA BORDER, AND DISCHARGE INTO THESE CURRENTS WOULD LESSEN

EFFECT ON DOWNSTREAM AREAS IN EVENT OF BREAKDOWN IN U.S. STEEL TREATMENT FACILITIES -OR- IF THE EFFLUENT PROVES TO BE DETERIORATING TO THE ENVIRONMENT.

AN EXAMPLE OF THIS IS WHEN THE EASTERLY [redacted] TREATMENT PLANT OF CLEVELAND OHIO BROKE DOWN IN LATE JUNE 1971 AND CONTINUED OVER THE 4TH OF JULY (1971) WEEKEND AND DISCHARGED RAW [redacted] WASTE INTO LAKE ERIE. THIS RESULTED IN THE CLOSING OF ALL BEACHES FROM CLEVELAND TO WITHIN 15 MILES OF PRESQUE ISLE, A DISTANCE OF OVER 100 MILES. HOWEVER DUE TO THE CURRENTS CARRING THE DISCHARGE TOWARD THE CENTER OF THE LAKE NEAR THE PA/OHIO BORDER, PRESQUE ISLE & THE CITY OF ERIE WATER SUPPLY WAS NOT EFFECTED.

SINCE US STEEL DISCHARGE IS NOT 120 MILES AWAY FROM ERIE BUT ONLY 30 MILES, OR SO, IT WOULD BE NECESSARY DK-3 TO LOCATE THE DISCHARGE INTO THESE CURRENTS TRAVELING TO THE CENTER OF THE LAKE TO PICK UP THIS NATURAL DILUTING EFFECT. THIS IT WOULD SEEM

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page 3

WISE TO USE THIS NATURAL FLOW IS LESSEN THE POSSIBILITY OF HARMFUL EFFECT ON AREAS LOCATED DOWNSTREAM FROM THE U.S. STEEL DISCHARGE.

THE IMPACT STATEMENT DOES NOT ADEQUATE LOOK INTO THE POSSIBLE OF LOCATING THE DISCHARGE INTO THESE CROSS CURRENTS. IF THIS DK-4 REQUIRES THE EXTENSION & RELOCATION OF THE 90"ϕ DISCHARGE PIPE A FEW OR SEVERAL MILES, THIS IS ENTIRELY FEASIBLE AS ILLUSTRATED BY THE 780 MILE PIPE LINE RECENTLY COMPLETED ACROSS ALASKA.

TO LITTLE, IF ANY, CONSIDERATION HAS BEEN GIVEN TO LOCATING IN THE MOST FAVORABLE CURRENTS IN THE DRAFT ENVIROMENTAL IMPACT STATEMENT. THE EXISTENCE OF THESE CURRENT, WAS ILLUSTRATED BY THE CLEVELAND WASTE PLANT BREAKDOWN IN LATE JUNE (29TH OR SO) 1971. THIS NEEDS TO BE EVALUATED.

SINCERELY,

Don Kopsalon
326 BEVERLY DRIVE
ERIE, PA 16505

PS. PLEASE SENT ME A COPY OF YOUR IMPACT. THANK YOU.

5 SEPT 78
(TUESDAY)

TO- COLONEL LUDWIG
DISTRICT ENGINEER
US ARMY CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

SUBJECT- COMMENT ON THE DRAFT ENVIROMENTAL IMPACT STATEMENT FOR THE PROPOSED U.S. STEEL PLANT CONCERNING THE SIZE OF THE DISCHARGE LINE AND THE QUANTITY OF EFFLUENT TO BE DISCHARGED.

THE WATER INTAKE LINE IS LISTED AS 72" DIA. PIPE WITH AN QUANTITY (INTAKE) OF 65,100 GPM (Ref. Table 1-19 etc). WATER LOST THROUGH EVAPORATION & DRIFT IS LISTED AS 16,300 GPM - OR - 25% OF THE TOTAL INTAKE, LEAVING 48,800 GPM (OR 75%) TO BE DISCHARGED.

THE SIZE OF THE DISCHARGE LINE IS 90"ϕ pipe.

IF ONLY 75% OF THE QUANTITY TAKE IN IS TO BE DISCHARGED, WHY IS THE DISCHARGE PIPE OVER 50% LARGER IN AREA THAN THE INTAKE PIPE?

DK-5 ABOVE FIGURES INDICATE THE DISCHARGE LINE SHOULD BE SMALLER.

DRAFT DOES NOT ADEQUATELY EXPLAIN 'WHY' OR FOR WHAT REASON DISCHARGE LINE SHOULD BE LARGER. THIS INDICATES THAT THE QUANTITY-

5 SEPT 78
Tuesday
Page 2

Comments - Size of Discharge Line
+ Quantity - Continued -

- That the quantity - to be discharged is much larger than stated - or that future quantities will be much larger.

Clarification of this area is needed for comment in the draft does not adequate explain this area. Thank you.

Please sent me a copy of your findings and your answer to this question for the final Environmental Impact Statement.

Sincerely yours,
Don Koppelman
326 Beverly Drive
Erie Pa 16505

5 SEPT 78
(Tuesday)

To - Colonel Ludwig
District Engineer
Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Subject - Area of Draft Environmental Impact Statement not adequately covered - Presque Isle State Park - more commonly called the "Peninsula"

Lying in the path of the effluent discharge from the proposed US Steel plant is Presque Isle State Part where over 100,000+ visitors gather on a good weekend and where over 2,400,000 attended this summer.

DK-6 The draft Impact Statement does not adequately consider the effect on this 'National Natural Landmark' as past history indicates that areas 'downstream' from effluent discharges from steel plants are effected.

This entire subject an its effect on the 2 million plus visitors needs to be re-evaluated. Sincerely, Don Koppelman 326 Beverly Drive Erie Pa 16505

PS - Please Send me a copy of your answer.

6 SEPT 78
(WED)

To- Colonel Daniel D. Ludwig
District Engineer, Buffalo District
US Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Subject: DRAFT ENVIROMENTAL IMPACT STATEMENT — CONTROLS + INSTRAUMENTS FOR MEASURING DISCHARGES FROM US STEEL

DK-7 IN REVIEWING THE DRAFT ENVIROMENTAL IMPACT STATEMENTS FOR THE U.S. Steel proposed plant, I DID NOT LOCATE ~~THE~~ A LISTING OF "DISCHARGES" TO BE MEASURED IN ORDER TO BE ABLE TO DETERMINE IF EPA LIMITS ARE BEING MET OR EXCEEDED, OR HOW OFTEN THESE MEASUREMENTS WERE TO BE MADE. IT IS POSSIBLE THAT THIS INFORMATION IS INCLUDED SOMEWHERES WITHIN THE FOUR VOLUME DRAFT, BUT IF NOT INCLUDED THEN THE DRAFT STATEMENT IS LACKING. THIS THEN NEEDS TO BE ADDED.

DK-8 ALSO IF THE ESTABLISHED LIMITS ARE EXCEEDED, THE STEPS TO BE TAKEN TO GET THE "DISCHARGES" BACK WITH IN ALLOWABLE LIMITS NEED TO BE CALLED OUT AND THE TIME TO DO SO SHOULD ALSO BE CALLED OUT. (IE, IF LIMITS EXCEEDED, PART OF OFFENDING OPERATION

6 SEPT 78
(WED)
Pg 2

MEASURING OF DISCHARGES - CONTINUED

SHOULD BE REDUCED IN OUTPUT, SHUT DOWN, OR ALL OPERATIONS SHUT DOWN UNTIL CORRECTION IS ACCOMPLISHED)

THE TIME LIMIT TO [redacted] CORRECT ANY EXCESSIVE DISCHARGES SHOULD BE CALL OUT IN THE FINAL DRAFT & BE MADE PART OF THE PERMIT BASED UPON THE 'DANGER' OF THE DISCHARGE & PERHAPS THE AMOUNT THE LIMIT IS BEING EXCEEDED OVER THE ALLOWABLE OR THE DESIRED AMOUNT.

DK-9 THIS TYPE OF CONTROL IS IMPORTANT FOR NOT ONLY THE AREA AROUND US STEEL, BUT FOR US STEEL ITSELF TO BE ABLE TO ACT RESPONSIVELY. AS THE CHAIRMAN OF THE BOARD, MR SAHINI, STATED U.S. STEEL WOULD IN THE MOVIE SHOWN BY U.S. Steel AT each of the four hearings. THUS U.S. Steel should have very little, if any, objection to including steps as suggested, since they intend to be well within the limits established. In event, the limits should be exceeded, US Steel should have or should desire to have, a workable plan to get back within the limits in a reasonable time. Failing to do so, US Steel should not only be willing to limit or close down whatever operation(s) required But should be guided by a plan to do so.

DK-10

6 Sept 78
(WLS)

Measuring of discharges - Cont'd

This would prove helpful, I believe to U.S. Steel, the EPA, the Army Corps of Engineers etc. Thus if this call out of steps to be taken is indeed missing, it should be added to the final draft and to the permit.

Sincerely yours,
Don Koppelman
326 Beverly Drive
Erie, PA 16505

PS- Please send me a copy of your response to this comment on the preliminary Draft of Environmental Impact Statement in your reply to the final Draft Statement. Thank you,

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230
(202) 377-3111 4335

September 5, 1978

Colonel Daniel D. Ludwig
Buffalo District, Corps of Engineers
Department of the Army
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This is in reference to your draft environmental impact statement entitled, "Proposed Lakefront Steel Mill, Conneaut, Ohio." The enclosed comments from the National Oceanic and Atmospheric Administration are forwarded for your consideration.

Thank you for giving us an opportunity to provide these comments, which we hope will be of assistance to you. We would appreciate receiving eight (8) copies of the final environmental statement.

Sincerely,

Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

Enclosures: Memos from William G. Gordon
Regional Director, FNE

Dr. Eugene J. Aubert
Director, GLERL, RF24

Gordon Lill
Deputy Director
National Ocean Survey

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Region
Federal Building, 14 Elm Street
Gloucester, Massachusetts 01930 AUG 25 1978

DATE : August 21, 1978

TO : Director, Office of Ecology and Conservation, EC

THRU : Assistant Director for Scientific and Technical Services, F5 AUG 24 1978

FROM : William G. Gordon, Regional Director, FNE

SUBJECT : Comments on Draft Environmental Impact Statement — United States Steel Corp., Proposed Lake Front Steel Mill, Conneaut, Ohio — CE — DEIS #7805.58

The draft environmental impact statement (DEIS) for United States Steel Corp. Proposed Lake Front Steel Mill, Conneaut, Ohio, that accompanied your memorandum of June 1, 1978, has been received by the National Marine Fisheries Service (NMFS) for review and comment.

The statement has been reviewed and the following comments are offered for your consideration.

General Comments

DOC-1 In our opinion, the DEIS does not provide sufficient discussion on possible mitigative strategies which could ameliorate the highly significant impacts on living aquatic resources for which the NMFS has a responsibility. Furthermore, the lack of quantitative analyses on expected entrainment and impingement losses of phytoplankton, zooplankton, ichthyoplankton and juvenile and adult fishes, does not allow us to make an accurate evaluation of the potential impacts on recreational and commercial fish species and their supporting food web.

Specific Comments

Volume 1

1. PROJECT DESCRIPTION

Intake Structure

Page 1-267, paragraph 1. Water to supply the requirements of the proposed steel plant will be withdrawn through a set of 12 intake heads located about 1,524 meters (5,000 feet) offshore in Lake Erie. The intake array will be stabilized by the placement of 500 cubic yards of rock and concrete block and 8,000 cubic yards of rock riprap.

DOC-2 The intake structure as designed may function as an artificial reef initially attracting benthic organisms and subsequently fish feeding on the benthos and other fish. Entrainment of smaller organisms and impingement of larger organisms originally attracted to the intake site by the artificial reef-like habitat is predictable.

Volume 3

4. ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

Erosion

(a) Primary Site Impacts

DOC-3 Page 4-489, paragraph 1-2. Studies conducted by the applicant indicate that severe erosion can be expected to occur along the exposed slopes of creek ravines within the project area. It has been estimated that 10-20 tons of spoil per acre/year may be eroded from the more level areas within the project site. No projections have been made concerning the steeper portions of the area. Further, the applicant has not developed an erosion plan which will stabilize the soil and prevent siltation in the adjacent creeks and Lake Erie. Heavy loading of silt in aquatic systems can smother benthic organisms, degrade the habitat (substrate) elevate the Biological Oxygen Demand (B.O.D.), and decrease the light penetration through the water column, thereby limiting photosynthetic activity of phytoplankton, algae and submerged aquatic plants. A suitable erosion plan designed to prevent loading of silt into the aquatic system should be developed so that serious stresses on aquatic organisms and their habitat will be minimized.

Impact of the Water Intake

Applicant's Analysis

DOC-4 Page 4-785, paragraph 2. The applicant has not provided any analysis of expected entrainment losses of phytoplankton, zooplankton or ichthyoplankton. The applicant has indicated only that losses will be several orders of magnitude below losses experienced at a power generating facility near Detroit, Michigan. This section is inadequate. In order to determine entrainment and impingement losses, particularly of ichthyoplankton, juvenile and adult fishes, a sampling program designed to measure relative abundances of ichthyofauna should be accomplished. The intake structure as proposed will function as an attractant to ichthyofauna and may contribute to serious losses of certain year classes of recreational and commercial species.

Volume 4

6. ALTERNATIVES TO THE PROPOSED ACTION

Alternative Sites

DOC-5 Page 6-11, paragraph 2. The applicant states that the Corporation does not own a single contiguous land tract on the Great Lakes which is large enough to serve the needs of the proposed steel plant. Therefore, the applicant has narrowed the analysis of alternative sites to those where existing steel plants are already in operation. We do not agree that only those sites owned by the applicant can be considered as alternatives. Tracts other than those owned by the applicant should be sought and considered as possible alternatives to the proposed site.

ELLIPSON/tab

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A-13

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
ENVIRONMENTAL RESEARCH LABORATORIES
Great Lakes Environmental Research Laboratory
2300 Washtenaw Avenue
Ann Arbor, Michigan 48104

July 26, 1978

JUL 31 1978

TO : Dr. William Aron
Director, Office of Ecology and Conservation, EC

FROM : Dr. Eugene J. Aubert
Director, GLERL, RF24

SUBJECT: DEIS 7805.58 - U. S. Steel Corporation, Proposed Lake Front Steel Mill, Ohio

The subject DEIS prepared by the Corps of Engineers, Buffalo District, on construction and operation of a steel mill on Lake Erie shore, has been reviewed and comments herewith submitted.

United States Steel Corporation is proposing to construct and operate a 3.5 billion dollar steel mill on Lake Erie shoreline at Conneaut, Ohio. The steel mill will occupy an area over one thousand hectares and will extend five kilometers along the shoreline. At the present time, the affected shoreline houses 50 to 60 cottages and is widely used for recreation. Ohio fisheries management personnel conduct a stocking program in Turkey Creek with the aim of establishing a salmonid beach fishery. The shoreline also supports a wide variety of migratory and permanent waterfowl species.

The size of the plannad steel mill construction and operation is very large and the potential for adverse environmental impacts is likewise large. Care and diligence are necessary in the planning, construction and operation of this project to insure that a suitable cost beneficial solution is achieved including consideration of local and regional economic development and environmental effects - both societal and ecological. Lake Erie is already heavily stressed by human activity in the coastal zone and the Erie Basin. The Great Lakes Water Quality Agreement between the United States and Canada states the national policy:

- to restore and enhance the water quality in the Great Lakes system,
- to be concerned about the deterioration of water quality to the extent that it causes injury to health and property, and
- to prevent further pollution of the Great Lakes basin ecosystem owing to population growth, resource development and increased use of water.

While the likelihood for adverse environmental impact is large, the potential problems should be viewed by the U. S. Steel Corporation and the various government institutions involved as a challenge in resource development and environmental management to obtain cost beneficial resolutions to the conflicts of use posed by this project and to achieve a suitable balance between

the uses of the Great Lakes environment.

As presently planned, the impact of the construction and operation of the steel mill will be a significant downgrading of the environment despite efforts to minimize detrimental effects of plant emissions to the air and effluents to Lake Erie and a significant restriction of the present and potential future uses of this segment of the Lake Erie shoreline for fisheries, recreation, tourism, water supply and residential use.
Prior to construction, the entire site will be fenced and lakeshore cottages razed. Public access to a number of roads including Lake Road will be terminated and the access to the site will be controlled and limited to one or two checkpoints. The Impact Statement indicates that establishment of oil, ore, pellet, and stone storage areas near the beach is not expected to harm the beach itself but the presence of these facilities will probably restrict access to the lakeshore for those individuals who are able to enter the plant site (Paragraph 4.186). Pleasure boaters using Lake Erie will detect a visual change in the character of the shoreline as one of the larger remaining parcels of relatively undisturbed land on the southern boundary of the Central Basin is developed (Paragraph 4.388).

We have four major environmental concerns about the plans of the U. S. Steel Corporation about which we believe additional analysis and plan revision are warranted to achieve a better balance between economic development and environmental conservation:

1. Extensive utilization of the Lake Erie shoreline. Review of the plans for the Lakefront Steel Mill as described by the Environmental Impact Statement indicates that little consideration was given to the accommodation of public needs and to maintenance of natural environment, as much as possible. The National Environmental Policy Act of 1969 requires federal agencies to "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities." A major natural resource at the proposed plant site is the Lake Erie shoreline. The five kilometers of shoreline will be fenced and public access eliminated. It appears that to satisfy NEPA requirements, a buffer zone of approximately 500 meter width should be created along the shoreline separating Lake Erie and the fenced plant site. This buffer zone should remain free of any structures and storage facilities, except pipelines, and be easily accessible to local population. Due to the lake breeze during the public use hours, no adverse effects from plant air pollution are expected. A greenbelt of planted large growing trees could mask the structures and help to reduce air pollutants in reaching Lake Erie. If for safety reasons, access to the U.S. East Breakwater Extension is not desirable, one or two fishing piers could be built at other locations on the shoreline.

DOC-6

A plan to share the amenities of the shoreline would require either relocation of the proposed storage areas and structures planned to be within the buffer zone to some other location on the site, or to move the entire plant layout a short distance to the south, or to move the entire plant or parts of it to alternative sites (Paragraph 6.14). In addition to creation of a buffer zone, some utilities

DOC-7

around the Great Lakes recently started to provide recreational facilities such as additional access roads, parking areas, boat launching ramps and others (e.g., on Lake Michigan shore, Wisconsin), also a public park with nature trails and observation points (Lake Huron, Michigan). Considering total costs of the Steel Mill, costs of the accomodation to NEPA requirements should not be a critical item.

2. Filling and Diversion of Turkey Creek. The filling of Turkey Creek will permanently eliminate the fisheries and aquatic ecosystem of Turkey Creek. Suitable habitat for fisheries spawning in the Lake Erie tributaries is already sparse and this adverse impact is irreversible. The upper reaches of Turkey Creek will be changed to a deep man-made drainage ditch and diverted to Conneaut Creek. Such extreme channelization will eliminate the aquatic habitat of this reach of Turkey Creek and generate a significant source of sediment load for Conneaut Creek. Major streambank erosion can be contemplated and with or without pollutants adhered to these sediments, a major adverse impact on the ecosystem of Conneaut Creek should be expected.

The Pollution from Land Use Activities Reference Group (PLUARG) report to the IJC in July 1978 indicates major impacts to the quality of the Great Lakes comes about from land drainage, erosion from the land and sediment transport down the tributary streams and creeks into the Great Lakes. A recent article by Karr and Schlosser (Science, 21 July 1978, Water Resources and the Land-Water Interface, Page 229) points out that the maintenance of natural nearstream vegetation and channel morphology in watersheds can lead to significant improvement in water quality and stream biota. Both PLUARG and Karr point out the need for a set-back of intensive land use activities from creeks and streams and the retention of a natural belt of vegetation in this set-back.

DOC-8 The desired solution for Turkey Creek is to leave it in as close to its natural state as is possible. The DEIS (Pages 6-68 and 6-69) considers the alternative "Set-back of Plant Structure to Achieve Protection of Turkey Creek and Adjoining Upland Habitat" but this alternative was not selected in the U. S. Steel Corporation plan. Due to the significant adverse impact, the plans to fill and divert Turkey Creek should be abandoned in favor of the desired environmental solution - maintain the ecosystem of Turkey Creek in as close to its natural state as possible and relocate planned facilities.

3. Chemical Effluents Discharged to Lake Erie. It is planned that "all treated process water streams, cooling tower blowdown, miscellaneous service water, roof runoff and treated sanitary wastewater would be combined into a single wastewater stream and discharged to Lake Erie via a multi-port diffuser located 5,300 feet offshore."

DOC-9 The DEIS identifies the following contaminants in the discharge to Lake Erie: oxygen demanding substances, dissolved nutrients, suspended solids, phenols, total dissolved solids, heavy metals, organics, trace

elements and ammonia. It states that some of these contaminants are toxic and some of them bioaccumulate. The intent of Annex 10, Hazardous Polluting Substances of the Great Lakes Agreement of 1978 (to be signed shortly by President Carter and Premier Trudeau) is to identify all substances known to have toxic effects on aquatic and animal life and a reasonable possibility of being discharged into the Great Lakes System. It is my impression that the DEIS is incomplete in this regard and additional information on potential hazardous polluting substances from the planned operations should be provided by U. S. Steel Corporation.

It is stated in the DEIS that the discharge of phenols and total dissolved solids (Page xiii - Primary Impact (14)) will exceed the Ohio standards for a distance of 1,500 feet from the Lakefront plant outfall. It is likewise inferred in the DEIS (Page xiv - Primary Impact (22)) that the discharge will exceed standards for heavy metals, organics, trace elements and ammonia for an undefined distance from the outfall.

Annex 2, Limited Use Zones of the Great Lakes Agreement of 1978, (to be signed shortly) indicates guidelines and responsibility for identification, delineation and assessment of impact of limited use zones (areas of non-compliance with standards or specific objectives). Likewise, all reasonable and practicable effluent treatment measures should be utilized to minimize the limited use zone; these zones shall not form a barrier to migratory routes of aquatic species or interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem; and conditions shall not be permitted within limited use zones which are either "(a) rapidly lethal to important aquatic life (result in sudden fish kills)" or "(c) which result in bioconcentration of toxic materials which are harmful to the organisms or its consumers."

DOC-10 From the material presented in the DEIS, it would appear that the U. S. Steel Corporation plan for effluent discharge to Lake Erie is not in compliance with the intent of the United States-Canada Agreement for the following chemicals and substances: phenols, total dissolved solids, heavy metals, organics, trace elements and ammonia (See Annex I, Specific Objectives of the Great Lakes Agreement of 1978). It is likewise not apparent that the U. S. Steel Corporation plan includes all reasonable and practicable effluent treatment measures for these contaminants. Additional data should be presented in this regard to insure that suitable alternatives are included in the plan.

4. Effect on Biota of Water Intake. The DEIS indicates (Page 1-133 & 1-267) that the water intake will be located about 5000 feet from shore with a 72-inch diameter pipe in the lake bottom; will have 12 intake heads equipped with a velocity cap; each intake head (92 in. in diameter) contains 4 square intake parts (48 in.x 48 in.) fitted with a stationary screen with 2 in.x 2 in. mesh, the lower

edge of each intake port is 5 feet above lake bottom and the minimum clearance of 20 feet below low water datum will be maintained; the raw water intake will be 14,800 m^3/hr; an average intake velocity is 0.26 ft/sec.

The DEIS states that the withdrawal of water from Lake Erie will entrain large numbers of phytoplankton, zooplankton, ichthyoplankton and both juvenile and small forage fish. Mortality of entrained organisms is expected to approach 100%. This is an unavoidable adverse impact.

While the raw water intake (14,800 m^3/hr) is large, this is only about 2½% of the 1970 cooling water requirements of steam electricpower in the State of Ohio (Reference Appendix 10, Power, Great Lakes Basin Commission Framework Study, Table 10-160).

DOC-11 Of concern is the siting of the intake structure relative to the abundance of larval fishes. While a single intake structure will have greatest impact on the fishes locally, the cumulative effect of many water withdraw. s can affect the total lake. It is important, therefore, t site each intake structure so as to minimize the entrainmen. of important biota (e.g., larval fish are considered the most critical). The DEIS makes no mention of alternative siting of the water intake structure in order to minimize the effects of entrainment of biota. Such an analysis should be made and a cost-beneficial decision made on the basis of existing data and best judgment. The Department of Interior, Fish and Wildlife Service, Great Lakes Fishery Laboratory is presently undertaking a study entitled "Fish Nursery and Spawning Atlas of Selected Areas of the Great Lakes"; the Great Lakes Fishery Laboratory should be consulted on water intake siting.

Obviously, even after construction of systems to control air pollution and water pollution to satisfy the applicable water quality and air quality emissions standards and objectives, the proposed major industrial development will downgrade the Lake Erie environment in many other ways, such as water loss due to cooling, congestion in Conneaut Harbor and others. These environmental effects, however, may be considered unavoidable.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C52/JLR

AUG 9 1978

AUG 4 1978

TO: William Aron
Director
Office of Ecology and Environmental Conservation

FROM: Gordon Lill
Deputy Director
National Ocean Survey

SUBJECT: DEIS #7805.58 - U.S. Steel Corp., Proposed Lake Front Steel Mill, Ohio

The subject statement has been reviewed within the areas of NOS responsibility and expertise, and in terms of the impact of the proposed action on NOS activity and projects.

The following comments are offered for your consideration.

DOC-12 In Volume 3, page 4-589, NOS is concerned over the apparent lack of plans for "Abnormal Events." Cannot some contingency plans be formulated? Also, on page 4-639, the maximum increase of lake water temperature of 10°C in summer and 19°C in winter seems abnormally high and very possibly detrimental to the biota.

DOC-13 Geodetic control survey monuments may be located in the proposed project area. If there is any planned activity which will disturb or destroy these monuments, NOS requires not less than 90 days' notification in advance of such activity in order to plan for their relocation. NOS recommends that funding for this project includes the cost of any relocation required for NOS monuments.

U.S. DEPARTMENT OF TRANSPORTATION
REGIONAL REPRESENTATIVE OF THE SECRETARY
434 WALNUT STREET
PHILADELPHIA, PENNSYLVANIA 19106

September 5, 1978

MEMORANDUM TO: District Engineer
U.S. Army Corps of Engineers-Buffalo
ATTN: Regulatory Functions Branch
1776 Niagara Street
Buffalo, New York 14207

SUBJECT: Draft Impact Statement
Proposed U. S. Steel Mill
Conneaut, Ohio

The subject Impact Statement has been reviewed by all operating administrations of U. S. DOT operating in Regions III and V. The following comments are offered for your consideration:

1. The transportation chapter in general should contain statements clearly indicating whether or not the portions of a particular impact caused by a transportation facility have been included in the overall assessment of such impact. We consider this to be important particularly with regard to those facilities such as highways, docks, etc., upon which the successful operation of the plant, or orderly development of the region depend. If such facilities are to be constructed with Federal financial assistance, their progress could be delayed unless we are able to conclude that their related impacts are minimal or are accounted for in the overall assessment of impacts. As presently written, it is not clear whether or not the draft accounts for possible transportation induced portions of DOT-1

   a. Effects on historical sites, recreational areas, falling under Section "4(f)" of the DOT Act, or other publicly owned property including open space,

   b. housing needs caused by displacement due to acquisition of property,

   c. water quality impact and effect on aquatic biota,

   d. air quality both during construction and in permanent operation,

   e. noise levels.

Clarification is recommended. A summation of transportation related impacts would be very helpful.

2. The discussions of alternate means of transporting workers to the job site, i.e. by bus or rail, tend to conclude that such a proposal is not suitable because of the capital investment which could be required for new equipment. We believe that a preliminary estimate of the number of "permanent" workers which might be obtained in the City of Erie should be made in order to provide insight as to whether or not such an investment would be warranted over the long term. DOT-2

3. The proposed treatment of traffic and the predicted congestion is of wide geographic concern. Car-pooling and van-pooling should therefore be more fully explored as a possible mitigating measure. We have enclosed a report on a TVA van-pooling program for your information. DOT-3

4. We believe the third system described in Table 2-232 on Page 2-476 should be major collectors rather than major arterials. DOT-4

5. The discussion of construction sequence of off-site access roads (Section 1.370) should be expanded to include the I-90 direct access proposal at State Line Road. Please note also, that any new access to the Interstate System requires the approval of the Federal Highway Administration regardless of the method of funding. DOT-5

6. DOT-6 The Traffic and Transportation facilities Section (Page 4-404) should be expanded to include estimated Average Daily Traffic in the project area.

7. DOT-7 Unseparated railroad/highway crossings are recognized as a major problem facing Conneaut. The EIS should indicate the number, location, and relative community service and safety impacts of the crossings, and the approximate cost to eliminate them.

8. DOT-8 The discussion of noise (Page XI) should be exparded to indicate the probable effect of increased railroad, highway, and waterway activity on hospitals, schools, and other noise sensitive land uses.

9. DOT-9 The discussion of alternative methods of shipping products (Page 6-30) indicates that greater dependence on railroad facilities could be beneficial. The final EIS should indicate what steps are being taksn to promote such increased use of railroads, and should indicate any major impediments to such increased usage.

10. DOT-10 Paragraph 1.46, Page 1-26, implies that water-borne shipping will not be attempted during the winter season. The final EIS sho ld clearly indicate what is intended in this regard.

11. DOT-11 Paragraph 2.424, Page 2-525, should indicate whether or not 1,100 foot vessels are planned. If such vessels are planned, there will be secondary impacts caused by dredging and port modifications necessary to accomodate increased draft and length unless they are operated at less than maximum capacity. Additional discussion is suggested.

The following 7 comments may be addressed collectively, or individually, in the paragraphs to which they pertain as you see fit.

12. DOT-12 Item 5, Paragraph 1.299, Page 1-215, should be expanded to indicate measures to reduce potential oil contamination caused by leakage or washdown. Water separators in floor drains may be necessary. Similar consideration would be appropriate with regard to all equipment or processes using oil as a fuel or lubricant.

13. DOT-13 An additional paragraph should be added following Paragraph 1.477, Page 1-363. Such paragraph should indicate that Section 311 of the Federal Water Pollution Control Act (PL 92-500) is administered by the Coast Guard in cooperation with EPA, and that such act covers on-shore as well as off-shore facilities. Title 40, CFR 110.3, indicates that no visible sheen is permissible.

14. DOT-14 Paragraph 4.492, Page 4-583, should indicate that Spill Prevention Containment and Countermeasure plans will provide for precautions to reduce potential adverse effects of spills. Oil/water separators or other techniques should be provided for.

15. DOT-15 Consideration should be given to providing dikes high enough to accommodate more than 2.5 inches of rainfall in 24 hours (Paragraph 4.563, Page 4-669). This would minimize the potential for wide spread oil laden runoff during extended rain. We suggest also that diked areas be impervious to prevent contamination of ground water.

16. DOT-16 Paragraph 4.572, Page 4-697, and Paragraph 4.760, Page 4-855, can be combined or cross referenced in regard to treatment of oil laden runoff.

17. DOT-17 Paragraph 4.591, Page 4-697, should indicate that the Spill Prevention Containment and Countermeasure Plans will indicate measures for coping with spills anywhere on the facility grounds.

18. DOT-18 With regard to construction in flood plains, granting of 404 permits, etc., we believe that the Corps' consideration should, if possible, take into account the probable secondary development induced by construction of the mill. This could greatly simplify the process of obtaining permits necessary for future work or Federal actions to be done by others.

We trust that these comments will assist you in producing an appropriate final EIS for this very complex undertaking. Should you or your staff require any assistance in addressing transportation issues, or in interpreting the DOT procedures and permit requirements previously furnished to you, please do not hesitate to call on this office for assistance.

We appreciate the opportunity to comment.

for Richard A. Dann

Franz K. Gimaler
Acting Regional Representative
of the Secretary

Down Wind Neighbors is a group of Erie County citizens who are opposed to the construction of the proposed U. S. Steel Plant at the Conneaut site. This position is based on many facts which must be made more public. The adverse environmental and socio-economic consequences for a large portion of the community make it essential for everone to look at these facts about this proposed steel mill. The following statement will separate some of the environmental and socio-economic consequences into two areas: construction and operation of the steel plant.

SECONDARY EFFECTS DURING CONSTRUCTION

Environmental consequences

DW-1 1. Due to lack of suitable on-lot sewage systems, temporary (package) sewage treatment facilities will be needed. These will be built to handle sewage from trailer parks for example. These trailer parks or housing developments will be prime housing locations for construction and steel maintenance workers and their families. "These systems...would have an adverse impact on the small, environmentally sensitive streams that exist in this portion of the Lake Erie drainage basin." (3.8; p.3-4) Some of these streams are Raccoon Creek Conneaut Creek, Turkey Creek and Duck Run. These adverse effects would be increased algae growth, increased siltation, decreased game fish population and losses in traditional spawning areas, especially for Walleye. This problem will be most severe in Springfield Township, West Springfield Borough and the older part of Conneaut City. (3.8; p.3-4)

DW-2 2. Due to the increased population, large water shortages will occur in some municipalities. (3.9 P.3-4) These shortages will further be aggravated by lowered water table hydrology occuring during construction. Already, water shortages exist in Albion and Girard. These areas have also been refused financial assistance by both federal and state agencies (Erie Times, August 9,78).

DW-3 3. "The location of solid wastes sites is already a problem in the Coastal Communities of both states" (3.10; p.3-5). Existing sites are nearing capacity, the rapid large influx of people and waste will cause severe solid waste disposal problems. Poor planning and handling of this waste will cause some environmental damage to coastal zone areas. People of this area are well aware of the problems of finding landfill sites anywhere in the coastal zone. This issue has drastically divided the different communities making cooperation difficult.

DW-4 4. The rural character of the area will change drastically causing losses of open spaces (recreation, fishing and hunting, etc. will be reduced), valued natural features (record maple trees, swamp white oak and rare vegetation) (4.624; p. 4-734) and prime agricultural land. (3.12; p.3-5)

DW-5 5. Noise pollution will increase due to additional trains, trucks, cars and heavy construction vehicles. This will be quite severe for Raccoon Creek Park.

DW-6 7 6. If applicant intends to clear any large amount of trees or brush by burning, significant temporary air quality degradation will occur. During burning periods, recreation will be adversely affected downwind. This burning, coupled with noise pollution, would make Raccoon Creek Park totally unusable for recreational purposes.

7. The loss of wildlife habitats will surely occur during construction and operational phases. Filling of Turkey Creek will destroy habitat for spotted turtle, fresh water fish, and spawning grounds for game fish. Both air and water pollution from discharges will disrupt food chains in the surrounding areas. The severity of this alteration is impossible to predict. Woodcock habitat will be destroyed causing possible loss of yearclass of birds, overcrowding in nearby areas resulting in starvation and disease. (4.621-622; p. 733-734) Similar effects are expected as population of deer, fox, raccoon, squirrel and rabbit are are displaced from site. (4.623; 4-734)

DW-8 8. Oil spills are a possibility due to increased lake traffic.

DW-9 9. Situation during construction would cloud swimming waters of nearby recreational areas. Since this situation will be suspended there is a possibility that Presque Isle beaches could be affected. Increased particulants in water will make filtration of water for drinking more difficult. The situation will also force fish out of immediate area, expecially Conneaut Creek, and losses of prime spawning areas will be quite extensive.

DW-10 10. Route 20 Bypass to mill from I-96 is in conflict with existing residential uses, land use plans and policies in Conneaut. (3.11)

SOCIO ECONOMIC CONSEQUENCES

DW-11 Many of these consequences will be the same during both construction and operation of the steel mill. These consequences will be more drastic than implied in the draft Environmental Impact Statement (DEIS) because of the conservative population increase projections. The 23,000 plus has been challenged many times by various local and state agencies and private organizations. Some of these are the Northwest Futures Committee, and Peter Loedding of R.A. Winslow Associates. These population figures are around 40,000. This means that all secondary consequences should be multiplied at least three times.

DW-12 1. The increased population will cause incredible pressure for recreational facilities. Since nearby areas will certainly be ruined by combinations of construction and operational pollution, new sites for recreation will be necessary and unfortunately quite difficult to find. New recreational areas will likely be developed farther south into both states; this means the loss of the lake and lake shore for recreation on a large scale. Some specifics:

a. loss of fishing on Turkey, Raccoon and Conneaut Creeks;

b. loss of beaches both east and west of proposed steel mill;

c. loss of hunting at Conneaut site - this will upset wildlife population in surrounding areas. The full consequences of this relocation are unpredictable, but overcrowding, increased stress, and some starvation will occur.

The losses of these recreational areas will make local recreation difficult, thus forcing residents to drive longer distances to adequate facilities.

2. Due to the higher wages of steel construction workers, the cost of living in both the local and regional study areas will dramatically increase over base-line projections. A large industrial development in an isolated and rural area could create a "boomtown" atmosphere in the local study area (4.68). Because of increased competition for limited housing and rental units, inflationary prices will be charged. Availability of lower cost materials products (food, clothing, furniture, etc.) will be replaced by higher priced products. The elderly, lower-income families and newly married couples will be most adverse. affected by these raises in the cost of living. Medical expenditures will also increase over baseline due to overcrowded facilities. Because of increased population power, demands will also rise dramatically. "Secondary electricity consumption in the DM-13 Ohio Principal Study Area is expected to rise roughly from ..5 million KWH in 1979 to just over 60 million KWH in 1990" (4.363, p. 4-427). "Secondary electricity consumption in the Pennsylvania Principal Study area is expected to rise roughly from 3 million KWH in 1979 to about 35 million KWH in 1990" (4.364; p.4-427). Distillate oil demands will also rise in the Ohio Principal Study Area from less than 700 barrels in 1979 to over 25,000 barrells in 1990 (4.375;p.4-449). In Pennsylvania the distillate oil consumption will rise from 300 barrells in 1979 to 5,000 barrells in 1990. Here is where the discrepancies in population are most important. If these projected figures are tripled our power source demands become astronomical over baseline predictions. This power will then become incredibly expensive given the current increases in power and heating costs. It is all to apparent how utility companies pass on prices of new plant construction to their customers. These facts prove that the price for power and heat will skyrocket affecting every resident of the regional study areas.

3. Population increases will make increases in schools, teachers, hospitals, doctors, dentists, waste water treatment facilities. solid waste facilities, new road construction and road maintenance, traffic and its problems, fire and police protection and many other secondary developments necessary. These expenditures, both public and private, will cost far more than any forseeable tax increases DM-14 generated by the proposed steel plant. Therefore, the increases for residents of all affected communities will increase. School tax increases as listed in the DEIS are: Conneaut City School tax increased at least 12% in 1981, property taxes in Buckeye local school district will increase 6% in 1981, 10% in 1985 and 12% in 1990; Ashtabula City School District 4%; Girard School District by $1.85 in 1981 and $90 after 1981; Fairview School District by $1.90 (4%) in 1981 and 2% in succeeding years (5.29-5.33; p.5-10-5-12). These taxes could be higher because of population discrepancies, as much as three times higher.

4. During construction, all other construction will be adversely affected perhaps halted completely. This will happen because the steel plant will use all union construction workers within 100 miles. Therefore, any further construction will have to pay higher wages in order to draw workers into the area. One way to avoid DM-15 this possibility would be to use non-union workers, but this would be totally unacceptable to local unions. Secondary construction would also be impaired by the unavailability of capital because U.S. Steel will use so much capital to build their plant. Without this secondary construction the resulting socio-economic and environmental consequences would be disastrous.

5 Because of the employment increases in the regional study area more people will enter the area looking for work. This migration of workers and their families will DM-16 basically keep the unemployment rate at its presently projected rate without the proposed steel mill. The estimated unemployment rate for 1990 without the steel mill is 5.3%, with the steel mill 5.2%.

OPERATIONAL PHASE

Environmental Consequences

1. The effects of SO_2 emissions on crops is harmful. Here is a quote from testimony of Wayne T. Williams on behalf of Citizens for a Better Environment in the Potential Bioenvironmental Impacts from the Proposed PG & E Coal-fired Plant in the Sacramento Valley at a hearing held at Solano Community College, Fairfield, California, June 27, 1978 -

"Sulfur Pollutant Doses Necessary to Cause Crop Yield Losses"

"California Air Resources Board staff recently reviewed the world literature on the DM-17 effects of SO_2 on vegetation and ecosystems. That evidence indicated that many species of plants have been significantly damaged by SO_2 alone or in combination with a number of other common air pollutants. Plant species sensitive to SO_2 at doses as low as 0.05 parts per million for 4 hours include alfalfa, soybeans, ryegrass, radishes, lichens, peas, oats, pinto beans and spinach; all California species. At doses as low as 0.15 ppm for several hours, a much broader spectrum of sensitive plants appears, including tomatoes, broccoli, cabbage, and a number of forest tree special including sycamore and white pines. At yet higher doses hundreds of plant species have been demonstrated to be sensitive to sulfur dioxide pollution. The degrees of risk to SO_2 is medium to very severe for legumes, sugar beets, members of the sunflower family, meadows and pastures, seed fruits, berries, walnuts, grapes, evergreen forests and woods, and a variety of ornamentals. The CARB staff recommend a secondary standard to protect vegetation of 0.05 ppm for four hours at the public hearings of May, 1977, and emphasized that this dose would not be protective to all plant species, especially the ecologically important lichens."

2. Raccoon Creek Park and the camp areas directly downwind will be lost as prime DM-18 recreational areas because of both air and water pollution.

3. Because of the air currents (daytime winds blowing from lake onto land; nighttime these winds reverse creating a sort of tube of air) the prevalent South easterly winds will blow any air emission along the shoreline. This will cause a "cloud" DM-19 to settle along the coast including Presque Isle and the City of Erie. This "cloud" could be invisible because large quantities of particulates should be removed, but still gases will be in the air.

4. Both thermal air and water pollution are very difficult to assess, but there are some predictable consequences of this pollution. Coho and Chenook Salmon will not run through warmer water. Flyways of migratory birds will be affected. What DM-20 consequences will this pollution have on ice formations which protect the shoreline? Will algae production increase because of the increased water temperatures? These are only two of many unanswerable questions which will be answered only after the damage is done.

5. Contamination of waterfowl and migratory birds who will land in holding ponds for DM-21 chemicals and untreated water or in the warmer water discharge areas where concentrations of pollutants is very high.

6. Since cancer rates are already high in this area, steelmaking in this air basin would contribute significantly to our cancer rates. Cancer rates for coke oven DM-22 workers are incredibly high and 20 out of every 100 workers in steel plants are stricken by one form or another of cancer.

7. Water emmissions from the plant will be significantly different from the present state of the lake. These figures are listed in DEIS p. 4-593 and 4-594. For example:

DW-23

Temperature - winter temperature during the worst case will be 68 degrees F. versus normal water temperatures of 32 degrees to 33 degrees F.

Ammonia - presently existing in the lake - 0.04 mg/l - steel plant emission 0.96 mg/l - thus an increase of 400%

Cyanide - presently existing in the lake - 0.0004 mg/l - steel plant emission 0.13 mg/l - or an increase of almost 3000%

These emissions will have serious environmental consequences for the immediate aquatic environment. Fish populations in the area will decrease sharply and drastic losses of prime spawning areas will occur.

DW-24

8. All air and water emissions are only projected figures and cannot be verified until after the plant is operational. Given the history of EPA and federal agencies vs. U.S. Steel we can not be sure that U.S. Steel will abide by federal standards. U.S. Steel's attitude toward pollution has been characterized on February 5, 1976 by John R. Quarles, the deputy administrator of EPA as "a record of environmental recalcitrance which is second to none." If they do not meet federal requirements there is little the federal agencies can do to stop the pollution.

SOCIO - ECONOMIC CONSEQUENCES

1. All impacts excepting #4 mentioned in the Socio-Economic Consequences during the construction phase will continue during the operational phase.

DW-25

2. Racial problems in rural areas will be a problem as large amounts of minority workers and their families will be moving into the area, since these areas are almost homogeneously white.

DW-26

3. Since attainment levels for both SO_2 and ozone will be met and probably exceeded, no future industrial construction will be permitted in the air basin region. Environmental takeoffs would be necessary, contributing to deterioration of air quality. Without major construction permitted local union workers will find jobs almost non-existant. U.S. Steel could be the local unions last large construction project, forcing those workers to leave this area or become permanently unemployed.

DW-27

4. The proposed steel plant will be the most automated plant in the world, thus reducing the labor needed drastically. A capital investment of such magnitude in other industries and manufacturing processes would generate considerable more jobs.

DW-28

For the reasons listed above the Down Wind Neighbors group believes that the public interest can best be served by preventing U.S. Steel from building its proposed Conneaut mill. This is one of the first corporate decisions to move out of heavily, industrialized urban areas into rural and undeveloped ones because of the cost of pollution abatement at existing sites is too high. In Environmental Steel by James Cannon states "if the cost of pollution control were to be passed on totally in the form of higher prices, this would cause an annual increase of approximately $5.00 in the cost of a large automobile containing two tons of steel.) (p.15) Edgar Speer in the September 12, 1977 issue of Iron Age, a trade magazine, said that we are "flushing the idea out" about the construction of greenfield sites as opposed to brownfield sites. U. S. Steel's massive attempt to degrade our environment and abandon urban areas is unconscionable. Theses urban areas already possess the necessary socio-economic infrastructure to support a steel industry. Morality and commitments to already developed areas must be essential factors in any corporate decision.

Core Members of Down Wind Neighbors

LOCAL [illegible] STATEMENT CONCERNING THE ADEQUACY OF [illegible] Aug. 2[illegible]

DM-29

1. The review period is too short, and an extension of 90 days is necessary. This action is warranted by a number of facts. Several key governing agencies have asked for an extension: Mayor Louis Tullio of the city of Erie; Robbie Robison, the Erie County Executive; the Erie County Council and the Northwest Future Committee, a planning board specifically set up to deal with impacts of the steel mill. These agencies acknowledge the sheer bulk of the document and the absolute necessity of carefully examining its content. These agencies, which have the necessary manpower and expertise to evaluate the document, thought it best to request more time. Since the plant could have serious consequences for the residents of this area, these residents must have plenty of time to study this document. These people seldom have large blocks of time to devote to Draft EIS; therefore, more time will be needed. There will also be comments from federal and state agencies made either just before the deadline or right after it. Those statements made just before will not be adequately examined by those concerned before the review period ends, and those comments made after the deadline do not have to be made public. This late information is necessary for the general public and local agencies to adequately assess the impacts of the steel mill. Since we, as residents of the affected region, must live with the consequences of this mill, it is essential that all information concerning the plant be adequately studied.

DM-30

2. The short periods of time for all sampling (biological, weather, air temperature, etc.) were inadequate, thus making the studies inaccurate. This was most recently seconded by Roger Kenyon, a biologist and area fisheries manager of the Pa. Fish Commission. In an article in the Erie Daily Times on Aug. 15, 1978, he said, "Another year of 'very intense' sampling is needed to determine what type of fish losses might occur." (p. 28-A)

DM-31

3. Some of the graphs and plates used were unreadable, according to Harry Schoole, Acting Chief of Interagency Archeology.

DM-32

4. Air temperature sampling was done in Buffalo instead of at Conneaut.

DM-33

5. Unemployment figures were taken from local labor boards instead of local employment boards.

DM-34

6. Interviews with Crawford County tourist board, where effects will be minimal, were used, instead of Erie County tourist board, where effects could be disastrous.

DM-35

7. Large discrepancies about population increases exist. The ALI/USS 13,000 person increase prediction has been repeatedly challenged by other agencies. A figure of 40,000 is the most consistent. If this is true, the secondary impacts would be severe and quite burdensome for all affected communities.

DM-36

8. The funding sources for all secondary developments have not been adequately described. Since these developments are in direct response to steel plant construction and operation, these data must form an integral part of EIS. Without this funding, catastrophic environmental and socio-economic consequences would occur.

DM-37

9. Alternative sites and technologies are not fully investigated; only 2 pages are given to this consideration. Such an important detail seems worthy of more input and conclusions, since the construction of this facility will completely change the present character of the impacted area. The Corps and the EPA only looked at sites which U.S. Steel owns. Why can't U.S. Steel buy land to develop a new plant? A quote from a Pa. publication "Identification of Critical Issues & Concerns..," helps to clarify this point. "A review of this chapter [6] indicates that U.S. Steel does not consider any of the alternatives, even remotely, to be economically or operationally viable." Reference is made to a statement found in Ch. 1, pp. 1-36, which states "...[the lakefront plant site] is so ideal, that is is essentially impossible to select a viable alternative site for the proposed plant." The frankness of such a statement renders virtually useless the effort expended in preparing Chap. 6.

DM-38

10. The state and national impacts of the proposed steel mill were not covered at all. A facility of this size must certainly have effects on the national and state economies.

11/ There are not enough information and conclusions drawn about different technologies and methods. A pelletization of coke was summarily dismissed. In Environmental Steel, James Cannon states: "U.S. Steel recently received a 6 million dollar grant from the Dept. of the Interior to conduct a project of its own into a coke forming process similar to pelletizing. The program will run 3 years, culminating in the construction of a small pilot plant." (p. 86). This information leads to an interesting assumption--U.S. Steel should be a leader in coke pelletizing or similar technology, yet they choose not to incorporate that technology into their new plant.

DW-39

(b)There is technology available for "any quenching" of the coke. Appreciable pollution occurs during wet quenching, where steam laden with pollutants escapes into the air. (Environmental Steel, p. 85.)

DW-40

(c)There is also no mention of recycling water. Apparently the availability of water supersedes any attempts to recycle water, which would spare the lake from any pollution. Water recycling technology is available and used in the U.S. and elsewhere in the world (esp. South Africa). Armco Steel is a good example of a major steel company which uses recycled water.

DW-41

(d)In a time when resources are becoming scarce, very little mention is made of recyclable steel. Recycled steel does not require coke ovens, which are a major source of air pollution from the steel mills. The Japanese are able to buy California scrap, ship it to Japan, make steel, ship it back to the U.S. and sell it cheaper than American steel companies can. Several small electric furnace facilities built by U.S. Steel might be more economically feasible. Instead, "the steel industry is rapidly eating up our mineral resources. At the same time it's building mountains of mine tailings and contributes to solid wastes accumulations, from abandoned cars to carcass smothered in landfill." (Environmental Steel, p. 136.)

DW-42

(e)The biological breakdown of both cyanide and phenol is not even considered. But "special strains of bacteria can thrive on these two pollutants and quickly

DW-43

convert them to harmless carbon dioxide and water...Bethlehem Steel Company advertises a 'bacteria cafeteria' at the Bethlehem, Pa., mill which is capable of 99.9% removal of phenol and cyanide." (Environmental Steel, p. 109.)

12. Any trade offs in the air basin concerning SO_2 and ozone emissions must be made specific. If these are not formulated, no permits should be issued.

DW-44

13. None of the environmental impacts were weighed in conjunction with the proposed Penelec coke power plant. The proximity of the two plants makes mutual consideration a necessity.

DW-45

14. In a letter from Brian J. L. Berry from the Laboratory for Computer Graphics & Spatial Analysis to Col. Daniel Ludwig, dated March 15, 1978, significant problems concerning the EIS were raised. This letter was requested by Col. Ludwig to help in the evaluation of the draft EIS. Problems which Mr. Berry perceived were:

a. Geographical assumptions were conservative, no look at repercussions backward (raw materials) and forward (finished products). (B-4). Changes in community characteristics were quite conservative, based on conservative premises developed by U.S. Steel. (B-7).

b. The selection of SIMPACT input parameters was also described as conservative. (B-8). "Frequently, unweighted averages of the individual community service ratios are calculated, ignoring the wide variation in their populations. Properly weighted averages should be substituted. It is here that the most serious errors have been made in SIMPACT input coefficients." (p. B-9)

c. There is an absence of a local growth rate climate which might occur once the character of the area has been drastically altered. This absence leads to "the ACI/DRS growth scenario...of a specific and restraining technology leading to social and economic impacts within a predefined area that are numerically small and that result in minimal disruptions of the existing character of the region." (p. B-10).

d. "The draft report would have been far richer had a range of alternatives

been considered...rather than presenting a single set of numbers an. arguing that is is a 'worst case.' In fact I can find very little justification for the ADL/USS worst case argument that is documentable rather than asserted." (B-11).

e. Baseline predictions are also a problem: "Population baseline sections are also most in the nationwide post-1970 changes in migration trends that have become evident...the local and state officials chose not to respond to these changes in the nature of charge; rather, their migration assumptions are simple annual averages for the entire 1960-1975 span." (p. B-15). "Alternatives to these baseline projections were missed, most notably the work of the Regional Economic Division of the U.S. Dept. of Commerce." (B-16).

These inadequacies listed here combined with those in the publication of the Commonwealth of Pennsylvania, "Identification of Critical Issues and Concerns--U.S. Steel's Environmental Assessment for the Proposed Lakefront Plant in Northwestern Pennsylvania," cast serious imputations on the draft EIS. Its blatant deficiencies will require significant changes if the final EIS is to be adequate. The extent of these changes is so great that the proposed time limit for completion of the final EIS is totally inadequate. This information leaves the Downwind Neighbors group no alternative but to ask for a new draft EIS to be prepared or for the 122-day preparation period for the final EIS to be increased to a full year.



CITY OF ERIE

PENNSYLVANIA

MAYOR LOUIS J. TULLIO
Joseph J. Roble, Executive Assistant
Patricia J. Liebel, Business Administrator

September 7, 1978

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

ATTENTION: Colonel Daniel D. Ludwig
District Engineer

Re: Comments on Draft Environmental Impact Statement
Proposed U.S. Steel Plant

Gentlemen:

We wish to submit our comments on the Draft Environmental Impact Statement concerning the proposed U.S. Steel Plant on the shores of Lake Erie straddling Pennsylvania and Ohio. The nature, size, capital outlay and development duration of the proposed Plant has no precedent in the history of economic development anywhere in the Free World and hence no practical experience as to the impacts (favorable or adverse) such a development may have on the adjacent communities. We feel that the citizens of Erie will benefit economically due to the construction and operation of such a plant. However, we see possible problems in trying to provide adequate highways, potable water and sewage treatment facilities, housing for the elderly and poor, and mass transportation facilities.

E-1 We are assuming that the State and Federal regulatory agencies will not issue any permits allowing variances from the established air and water pollution standards. In addition the said permits will not take up all the allowable

E-2 pollutant increment so that other industrial development may be hampered, especially in the Erie area. We stress the need for proper and vigorous monitoring of the

E-3 Plant effluents and their effect on Lake Water and the Air Basin when the Plant will be in operation.

E-4 The increase in population predicted for the area will require additional facilities and services provided by the City of Erie. The immediate need for expansion and the capital outlay makes it necessary for the State and Federal government to set up a special mechanism allowing us to obtain grants and other funding based on an accelerated process. We believe that the proposed Plant is good for our Country and Pennsylvania and as such the Country and the State should provide necessary resources in order to minimize the economic and social strains that will be generated by the Plant.

The following are specific concerns and our evaluation of the impacts that the proposed U. S. Steel Plant may cause on our community:

POPULATION PROJECTIONS

Planning for the impact on the City of Erie of the proposed U. S. Steel Project requires the projection of the increased population that will result by 1990 within the legal boundaries of the City of Erie, and within the area served by the City's water and sewage systems that lies beyond the City's boundaries.

In developing these population projections, the Erie City Committee on the U. S. Steel Project has reviewed the projections that are included in the Arthur D. Little Study, the Draft Environmental Impact Statement, the Erie County Department of Planning Evaluation, the Study by Beckman, Yoder and Associates, and the Battelle Study.

The population projections for the City of Erie and the City's utilities service area made by the Erie City Committee are based upon the following assumptions:

1. Employment during the construction period (estimated at 10,000) will not result in any long term population increase for the City of Erie and its utilities service area. The City of Erie will discourage any housing developments that are intended for short term periods of residence by migrant construction workers. E-5 Any residential construction intended to accommodate construction workers who migrate into these areas will be part of the inventory of residential units that will accommodate on a long term basis residents of these areas resulting from natural population increase, or the long term employment and population impacts in the operational phase of the U. S. Steel Project. To accomplish these objectives, the City will strengthen its housing and related codes, and the enforcement of these codes.

2. Direct increased employment throughout the bi-state impact area in the operational phase of the U. S. Steel Project will reach a total of 8,500 workers.

3. The total increased direct and indirect employment in the bi-state impact area resulting form the U. S. Steel Project in 1990 will range from 1.5 to 2.0 times the direct employment total of 8,500 workers, a total increase in employment of 12,750 to 17,000 workers.

4. The total increased population in the bi-state impact area resulting from the U. S. Steel Project in 1990 will be 3.2 times the increase in direct and indirect employment, a multiplier used in all utility design planning and required by D.E.R. and E.P.A. This would result in a total increase in population of 40,800 persons to 54,400 persons.

5. The natural increase in population for the bi-state impact area by 1990 that is independent of the impact of the U. S. Steel Project is estimated at 47,200 persons, or an increase from 458,400 persons in 1975 to 505,600 in 1990 (D.E.I.S.).

6. The total population increase in the bi-state impact area by 1990 resulting from natural population increase and from the U. S. Steel Project is estimated to be from 88,000 to 101,600 persons.

7. The population growth scenario that is most likely to occur is the Coastal Community scenario which proposes that the population increases stimulated by The U. S. Steel Project will occur north of I-90 in a coastal zone that includes the area from Ashtabula, Ohio through Conneaut, Ohio and West Springfield Township in Pennsylvania to the City of Erie.

8. Existing zoning and municipal regulations would enable the City of Erie to accommodate an additional 23,000 residents within its boundaries.

9. The natural population increase expected in the bi-state impact area will not significantly affect the City of Erie, but could result in an increase of 5,000 persons in the City's utilities service area if the City's utilities are made available for residential developments that would accommodate such an increase in population.

10. The Pennsylvania sector of the bi-state impact area will receive 50% of the population increase stimulated by the U. S. Steel Project through 1990 (20,400 to 27,200 persons); 90% of these persons will reside north of I-90 (18,360 to 24,480 persons); 25% of these latter populations will reside in the City of Erie (4,600 to 6,100 persons); and 50% of these latter populations will reside in the City's utilities service area outside the City (9,200 to 12,250 persons).

The above assumptions provide the basis for the following population projections:

	City of Erie	City of Erie Utilities Service Area Outside the City
Base Population - 1975	129,000	52,600
Natural Population Increase	—	5,000
U.S. Steel Population Impact	4,600 to 6,100	9,200 to 12,250
1990 Population	133,600 - 135,100	66,800 - 69,800

These projections are based upon currently available data, and the assumptions and concepts regarding the porposed U. S. Steel Project that are outlined above. They should be revised in accordance with new data, and any modifications that may be appropriate in the assumptions upon which these projections are based.

WATER

E-6 The discharges of pollutants from the Plant may deteriorate our raw water supply thus requiring considerable capital expenditures and operating expenses in order to provide quality potable water for our citizens. The nature of pollutants and unknown effects that may result from the anticipated discharges necessitates the installation of a number of all-weather sampling stations and adequate laboratory facilities for analysis. One sampling station may be located ½ to one mile off shore at the foot of Avonia Road. The results may then be compared with the data on raw water quality that has been gathered by the City of Erie Water Bureau over the last decade. All costs for such sampling and analysis must be borne by someone other than the City of Erie.

E-7 We strongly suggest that the intake for the Plant be located east of the outfall. Since communities in Pennsylvania will be affected by the discharges, both the intake and the outfall should be located in Pennsylvania allowing us better control over their operation. The organics (chlorinated and non-chlorinated) must be added to the list of pollutants that need to be monitored daily.

E-8 We wish to stress the need for special consideration by the Federal Government such as is being proposed for "energy boom towns" in order to reduce the financial strains that the adjacent communities will face because of the construction of a $3.5 billion plant within a relatively short time period.

It is our understanding that the official comments submitted by State and Federal agencies will be made available to us shortly after September 8, 1978 so that we may be able to further evaluate the possible and probable impacts on our community at a later date.

Sincerely,

Louis J. Tullio
Mayor

LJT:kag

ERIE COUNTY FARMERS' ASSOCIATION

Affiliated with
American
Farm Bureau
Federation

and
Pennsylvania
Farmers'
Association

Colonel Daniel D. Ludwig
District Engineer
Department of the Army
Buffalo District, Corp of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel:

My statement tonight is on behalf of the Erie County Farmers' Association. We are an organization of 549 farm families in Erie County.

We have no policy, pro or con, concerning the proposed U. S. Steel Conneaut Plant. However, we do have several policies which pertain to the effects a complex such as this will have on Erie County agriculture.

Farmers recognize the need for industry in our country and a strong competitive steelmaking industry. After all, farmers are the largest buyers of steel of any group in the country. If it were not for the farmers many steelworkers would not have a job today. As you have heard stated in the film presented by U. S. Steel, our country has changed from an agrarian society to an industrial society. There is only one reason for this transition and that is the fact that our American farmers have developed tremenduous efficiency, where less than four percent of our population can produce food and fiber for everyone. People can work at other than producing food in order to

exist.

The Erie County Farmers' Association feels that the Draft E.I.S. leaves many serious questions about the impact of the proposed U. S. Steel facility on agriculture in Erie County unanswered. Many problems for farmers inevitably result from an infusion of heavy industry into a predominately agricultural region. We feel that very few of these problems have been addressed in the Draft E.I.S. from the standpoint of the farmer. We feel that in many cases conclusions have been drawn or implied that we cannot agree with.

In surveying our membership we find the same concerns expressed again and again. Our members are worried about air pollution damage, from both primary and secondary emissions, and all the various potential combinations thereof. Air pollution and agriculture simply are not compatible entities. All of the air pollutants mentioned in the E.I.S. ECFA-1 are harmful, in varying degrees, to one agricultural crop or another. Ozone in particular appears to be a problem without a solution in the E.I.S., especially if the population estimates are low, as we feel they may be. "Offsets" have been mentioned as a policy for reducing ozone in our air basin, but as yet we have seen no explicit plan for this offset policy. We feel that if there is such a plan, it should have been detailed in the E.I.S.

Acid rainfall is another area of concern. The effect that sulfuric ECFA-2 acid rain could have on crops and vegetation in general has not been, and perhaps cannot be, fully investigated. The potential for damage is enormous. Sulphur dioxide can cause injury to leaves of growing plants. Injury has been classified into two types - acute or chronic.

Acute injury is caused by high concentrations of sulphur dioxide in a relatively short time. Chronic injury is caused by a long time absorption of sulphur dioxide at sub-lethal concentrations. When sulphate accumulates beyond the level that the plant can tolerate, chronic injury occurs.

Acute injury can occur within an area from a single source or many sources such as homes, office buildings, industry and power plants, one of which is proposed for this area. Factors which favor injury are high relative humidity (70%), warm air temperature (40 degrees) and a steady wind in a given direction, factors which our area has. Acute injury to vegetation could develop during anticyclonic conditions with high pressure, heavy air, low wind speeds and a temperature inversion allowing pollutants to build up.

An important consideration is the effect of the Lake Erie shoreline on local winds. Near the lake shore recirculation can occur and high concentrations of contaminants may build up during a period of several days in a recirculating air mass. Each area has its own microclimatology. Flow patterns at a weather station a few miles away may not be the same as at the damage site. Plants and trees vary in susceptibility to both chronic and acute damages. Alfalfa is the recognized plant most sensitive to sulphur dioxide. This is an important forage crop in cattle feedings in Erie county.

Researchers have found that in highly industrialized areas it is difficult and at times impossible, to maintain proper blood chemical levels in dairy cattle. Pollutants falling on the growing plants are ingested by cows as they feed upon these plants, creating the imbalance in blood chemical levels which cannot be corrected.

The primary impacts from the plant could be sufficient to seriously endanger agriculture in Erie County, especially in the fertile lake plain area of Western Erie County adjacent to the proposed mill. We are not encouraged by the U. S. Steel's past history of environmental degradation in many of its other locations. From all indications their environmental policy seems to be to wage war on the environmentalists, rather than on pollution. U. S. Steel would have the potential, in the proposed facility, for enormous destruction to agriculture, and for that matter to life in general in our area, in the day to day

ECFA-3 operation of the proposed mill. Any pollution control breakdown, any shutdown of pollution control devices for one reason or another, any failure of the company to comply with a shutdown order from the regulatory agencies, could be disasterous for agriculture. We have heard a lot of talk from U. S. Steel officials that they would be good neighbors. Unfortunately, in many cases, their record simply does not back them up. We have neither the financial resources nor the time, at this point, to do our own E.I.S. on the primary effects of the proposed facility on agriculture. We can say with assurance however, that from the standpoint of producing agricultural commodities, we can find nothing but bad news for agriculture among primary impacts covered in the E.I.S.

Troublesome as the primary impacts from the proposed mill may be, the secondary impacts are probably worse for agriculture, especially in the local area in Western Erie County. Here we have the case of a giant

ECFA-4 industrial complex, one of the largest, or perhaps the largest, integrated steel producing facilities in the world, being plunked

in the middle of a garden. Make no mistake about it, the local area along Lake Erie is a garden, worked for the most part by small, independent farmers, the same kind of people who made the United States known as the "breadbasket of the world". The garden, especially the fertile lake plain area, because of a combination of factors which can be readily ascertained by any willing to inquire, is one of the finest agricultural areas in the United States. This is one of the very few areas able to produce quality Concord grapes. The Chautauqua-Erie grape belt is the largest Concord grape producing area. We have proper conditions for and do have very extensive plantings of nursery stock. Some varieties of nursery stock are very sensitive to air contaminants. This area produces fruits and vegetables with quality and flavor unmatched by other regions. If this was known to the A. D. Little Company and U. S. Steel, they gave little indication of it in their E.I.S. If it was not known to them it could have been because they never asked anyone, or perhaps, because they didn't care. For example, the section listing acreages of various crops produced, one vegetable crop was listed incorrectly to the extent of approximately forty times. There are several other crops listed at figures which are misrepresented by huge percentages.

The difficulties of farming in the middle of a city can be easily documented. Cities, for the most part, become cities at the expense of the surrounding "countryside", better known to farmers as "farmland". The E.I.S., it seems to us, minimized the main factor in the secondary impact of the plant - population. Experts from Erie County Planning, Crawford County Planning and the Northwest Futures Committee have come up with population figures considerable higher than those in the E.I.S.

People, large numbers of people, bring pressure to bear on agricultural

land. People need that land, for houses, for stores, for recreation, for schools, for highways, for landfills, for more plants like U. S. Steel where they can work. And people get upset with the farmer, because he gets angry when they take some apples off his trees, and he posts his land and won't let people trample his corn patch in search of pheasants, and the fertilizer he uses doesn't smell good, and neither does his barn, and sometimes neither does he. "People pressure" is one of the hardest problems a farmer has to contend with. And so pretty soon somebody offers him a good deal for his land because they want to put up a shopping center, and he decides to sell. Nothing wrong with that - it's the American way! Another piece of farmland has been lost, you say? So what! Everybody knows food comes from the grocery stores - or McDonald's!

Please excuse our facetious look at farming in the city. Our point is that the E.I.S. is almost as facetious in its failure to critically examine the true impact of the U. S. Steel on Erie County agriculture. It is trying to convince people that things will be pretty much as they are now. We simply do not believe that line. We question whether A. D. Little and U. S. Steel believe it either, or whether, in fact, the entire secondary impact portion of the statement is not just a white-wash job designed to lull the public, and anyone else who will buy it, into a false sense of security - the "it can't change things that much" attitude. We think it will change things for farmers, the more so if the population projections turn out to be in error.

The primary impacts from the proposed facility are potentially disasterous, the secondary impacts, although glossed over, we view as putting tremendous pressure on agriculture. Taken together, they say to us that Erie County agriculture would have a very difficult time if the mill were built.

One of the definitions which we found of particular interest in the glossary of the E.I.S. was "any species which is in danger of extinction throughout all or a significant portion of its range....." - the definition of an endangered species. We feel that if this proposed U. S. Steel facility is actually built, this definition will apply to the Erie County farmer.

ERIE COUNTY DEPARTMENT OF HEALTH

606 West Second Street
Erie, Pennsylvania 16507
814/ 454-6631

Board of Health
O. O. WENTLING, D.O., Chairman
ARTHUR CALABRESE, D.O.
LUMAN C. DELONG
LAWRENCE HINKLER
ARTHUR PAAVOLA, V.M.D.

September 5, 1978

Certified Mail #338168

Colonel Daniel D. Ludwig, District Engineer
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

Attention Regulatory Functions Branch

Dear Colonel Ludwig:

SUBJECT: Comment and Recommendation
Draft Environmental Statement
Department of the Army Permit Application #77-492-3
Proposed U. S. Steel Corporation Lakefront Steel Mill
Conneaut, Ohio

The Department of Health of Erie County, Pennsylvania, has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed U. S. Steel Corporation's Lakefront Steel Plant, Conneaut, Ohio, and Springfield Township, Pennsylvania. We wish to have entered int the official transcript record the following comments and recommendations to the Corps of Engineers on their permit application #77-492-3. Our comments are arranged to coincide with the various proposals of the application.

Construction of Water Intake and Effluent Discharge System in Lake Erie

EDH-1 We have looked at the proposed effluent parameters found in the DEIS and can concur with the statement that under normal circumstances, the effluent would have no significant adverse affect on Lake Erie. However, we do not concur with the findings on worst case scenarios. On page 4-821 of the DEIS, the statement was made indicating that during 1977 sampling the threshold pH of 8.2 was not recorded in the summer of 1977. This office is aware of numerous near shore studies done in recent years in Lake Erie which indicate that a pH of 8.2 or greater was commonly found at times in summer months. The annual report of selected analyses and monitoring of Lake Erie Water Quality, 1974, prepared for the Commissioners of Erie County, Pennsylvania, indicated that the pH of 8.2 was exceeded at station #4 (near the proposed plant) every time that the station was recorded during that season. This is important because of the relationship between ammonia-nitrogen (NH_3-N) and pH. At pH levels above 8.2, ammonia becomes increasingly toxic to aquatic life, and the assumption that the ammonia levels in the effluent will not be inimicable to aquatic life cannot be accepted as valid by this office. On page 4-594 of the DEIS, there is a statement that the pH may exceed 8.2; however, no mention was made in the DEIS that other studies

done in the area of the steel mill routinely indicated pH above 8.2. The DEIS discussion of ammonia did cover the toxicity of this chemical species but made little or no mention of the possible algae blooms followed by fouling of bottom and beaches in the area and the eventual decrease in oxygen as decomposition takes place. In view of the recent government studies that indicate phosphate loading seems to be stabilizing in Lake Erie while ammonia was increasing, it would seem that some address should be made to avoid compounding nitrogen (ammonia) problems and possible subsequent algae blooms in the downstream area.

EDH-2 The DEIS indicates that under northeast wind conditions, currents and wave actions will cause the effluent to blow on shore. This gives us some pause for thought on this blooms effect on the near shore productivity area. The data collected by A. D. Little indicates that this near shore area is highly productive and serves as a nursery area for many lake species of organisms, and we can see possible problems with the plume encroaching in these highly productive areas.

EDH-3 It was also noted by the DEIS that during certain weather conditions, an eddy effect was created between the outfall and the presently existing breakwall structures associated with Conneaut Harbor. This eddying effect could possibly have the effect of concentrating constituents of the effluent and hence become toxic in the near shore areas.

EDH-4 The data developed by A. D. Little on ichthyoplankton appears to be atypical of a typical near shore ichthyoplankton profile. This could possible be because 1977, when this work was done, had unusual weather conditions with respect to record rainfall. Also, the ichthyoplankton developed was somewhat limited in the area of the proposed intake and discharge structures.

EDH-5 The DEIS indicates that 100% of any impingement in the intake structure would result in 100% mortality, thus any organism in the immediate area would be removed from the ecology of the lake. The data contained in A. D. Little's assessment is not adequate to evaluate if this impingement and mortality would be significantly adverse.

EDH-6 The location of the discharge structure also is lacking in specific data on ichthyoplankton and the effects it will have on the area.

EDH-7 The aquatic information developed for the DEIS is not a full year's worth of data and also gives every indication of being an atypical year with respect to weather for study. It was this office's understanding that A. D. Little and or their subcontractor, Aquatic Ecology Associates, would take all data collected and thoroughly evaluate and analyze and summarize the data gathered. To this date, we have not seen any such report and feel that before the full evaluation of the intake and effluent structures, the characteristics and flow of the intake and effluent cannot be adequately evaluated. The data developed was extremely voluminous and we could not begin to analyze the data collected in a satisfactory manner.

EDH-8 The DEIS indicates that roof and other surface runoff will be put into the outfall structure untreated. Runoff can be significantly contaminated from fallout, exhausts, and other sources. No attempt was made in the DEIS to quantify pollutional

loadings from these runoff sources, and further, these runoff sources were not apparently included into the proposed effluent concentrations. We feel that contamination from the roof drains and other sources could possibly be significant and should not be give the somewhat casalier treatment it was given in the DEIS.

EDH-9 Based upon all of the foregoing observations and comments, this office would recommend to the Corps of Engineers that the proposal for intake and outfall structures in Lake Erie be delayed or denied until such time as the above questions can be answered. Our observation of the intake and outfall structure would be that it might be more ecologically advantageous to move the outfall to the east and further offshore and put the intake further offshore. However, without adequate ichthyoplankton and other studies in other areas, this recommendation could not be fully substantiated.

Extension of the Conneaut Harbor East Pier, Construction of an Adjoining Unloading Dock and the Installation of a Shore-Connected, Raw Materials Handling System

The construction of these facilities would appear to have no lasting unavoidable adverse impacts in the Conneaut harbor area. We would have the following comments on this particular portion of the application.

EDH-10 Any activity that involves removal of lake bottom or placement of fill materials on the bottom will resuspend sediments located in the area of the construction. This suspension of materials could create hardship on the aquatic community in the area through reduction of light, turbidity, and suspended material clogging breathing operatus of aquatic species. Due to the highly productive nature of the harbor area, the possibility exists for smothering of aquatic organisms.

Also to be considered is the blocking of migratory fish routes, as Conneaut harbor does act as the mouth of Conneaut Creek, which the DEIS points out, does support salmonoid migration.

Our recommendation to you would be to issue this portion of the permit with special conditions that would limit disruption of finfish activities, i.e., spawning and migration, and resuspension of sediments and any intrained organics in the bottom.

Dredging Lakeward of the Unloading Dock

EDH-11 Dredging activities in harbor areas are routinely carried out to keep channel ways clear for shipping activities. We have the following comments.

Dredging decreases transparency and light penetration in the water and also resuspends the bottom sediments. This activity could possibly create problems much the same as the pier construction and dock proposals outlined above.

Unlike the pier construction and docking facilities, dredging will have to be repeated at routine intervals to keep shipways clear. The DEIS did not address the accumulative effects of dredging activity.

EDH-12 We would recommend to the Corps that this portion of the application be issued with conditions limiting disruption of finfish activities, resuspension of sediments and organics, and also proper disposal of dredge materials.

Filling of the Natural Channel of Turkey Creek Between Lake Erie and the Conrail Railroad Tracks, Diversion of the Remaining Turkey Creek Watershed Upstream of the Site into Conneaut Creek Via an Excavated Ditch and Construction of an Erosion Control Structure at the Confluence of the Diversion Ditch in Conneaut Creek

The relocation of Turkey Creek, as the proposal has come to be identified as, is perhaps the most difficult portion of the application to comment on. It is a fact that habitat created by Turkey Creek is unique and any destruction of the habitat is an irretrievable loss. This habitat serves not only aquatic organisms, but also terrestrial ecology that depends upon Turkey Creek for its habitat maintenance. The filling of Turkey Creek represents an absolute irreversible environmental impact. We would offer for your consideration the following comments.

EDH-13 The DEIS indicates that overall the worth of Turkey Creek is not that significant to the aquatic environment, when one considers the overall study area. Perhaps the most interesting aspect of the stream itself is the fact that we received word that there was natural salmonoid reproduction noted in the spring of 1978. This was not in the DEIS. Natural reproduction is limited in the study area due to the fact that most study area streams are generally not suitable for salmonoid reproduction. In the study area, the fishery for salmonoids is generally considered to be a put and take fishery and not dependent upon natural reproduction of the species involved. No estimates of the aquatic populations were made with respect to fish utilization of Turkey Creek. Therefore, we cannot comment on the significance of any loss of aquatic habitat.

EDH-14 Perhaps more important than the aquatic ecology of Turkey Creek is the terrestrial habitat that will be destroyed with the filling of the main stem of the stream. Of primary importance is the fact that this terrestrial area does support breeding grounds for woodcock; and if the proposal is allowed to continue, these breeding grounds will cease to exist. It should be noted that woodcock habitat is considered to be a transitory habitat. The habitat, unless maintained, might eventually become unavailable for woodcock breeding on its own. The proposal in the application would expedite and insure the demise of this habitat.

EDH-15 It would seem premature to issue a permit to rechannel Turkey Creek without knowing how the process would proceed. What methods will be used, sources of fill, time frame, handling of surface water, stream water, etc.? Which areas will be used as industrial fill, assuming that the Department of Environmental Resources' permits are approved? What will happen to water that accumulates in the stream bed in the interim? It is one thing to say it will be filled in, but quite another to do so in an acceptable manner, assuming a permit was issued by the Corps and the Department of Environmental Resources. These are some questions we would think should be addressed in the final EIS before a decision can be made.

EDH-16 This office has no specific recommendation for action on this portion of the application, other than to say that issuance or denial of the Turkey Creek portion of the application should be based on mitigative measures worked out with the agencies more directly involved in fish and wildlife management.

Secondary Impacts

There has been considerable controversy over the secondary impact projections contained in the DEIS. This office realizes that any planning effort for a proposed project is an educated guess, at best. The impacts outlined in the DEIS appear to be based upon U. S. Steel's feeling that any secondary impact from the proposal will be minimal. This office has reviewed the data base that was used in this impact model for water needs, sewerage generation and other water and solid waste related areas, and we feel that in many areas that data base that was used was either misrepresentative or erroneous.

EDH-17 For instance, the DEIS indicates that Springfield Township will have to develop a public water supply system almost immediately and further that this system would cost around one million dollars. However, there were no facts given as to what type of system was needed, i.e., whether groundwater or surface water is to be used, and also what treatment would be required for that water. In review of the Charity and Miller study done for U. S. Steel, it becomes obvious that groundwater resources in the Springfield Township area are relatively limited, thus precluding heavy groundwater usage in that area. By using this data, it would seem to be reasonable that Springfield Township may have to go to Lake Erie for an adequate source of drinking water. The development of Lake Erie as a drinking water supply for Springfield Township would in all probability result in expenditures greatly exceeding one million dollars for intake structures, treatment facilities, distribution and pumping. Although the primary effects portion of the DEIS addressed themselves to the usage of the water for fish, aquatic life, recreation, etc., it did not address itself to the effects that the effluent from the plant may have on a water supply intake located in the immediate area of the effluent. If Springfield Township did have to go to a lake intake for their water supply, this intake would be directly downstream from the effluent.

EDH-18 Another area of secondary impacts we feel was not adequately covered, was that of urban runoff and possible synergistic or antagonistic effect with the mill effluent. It has been long established in the published literature that urban runoff can contain significant quantities of poolutants, and with the proliferation of streets, paved areas, and other urban sources of pollution in the Springfield Township area, the resultant loadings on Lake Erie should at least be considered in relation with the effluent. Also, the impact of any secondary pollutants should be evaluated on the near shore productive zone in Lake Erie.

EDH-19 Also, another area of concern to this office lies in the statements in the DEIS which indicate that proliferation of package sewage treatment plants could occur to handle secondary development. In all likelihood, the Department of Environmental Resources of Pennsylvania would not allow such a proliferation to occur and this would limit any secondary growth to using on-lot sewage disposal methods or the municipality installing centralized sewerage services. There was very little mention made of the fact that most of the sewerage facilities that presently exist in the immediate study area are either approaching an overload

condition or are presently overloaded. This is further indication that if development does occur, there will be no means, other than on-lot sewage disposal, to handle the sewerage needs of any new development.

This office understands that there are no specific requirements for outlining secondary effects for an environmental impact statement. However, we feel that if data is submitted, it should be as factual as possible and its content be as accurate as possible. Also, the DEIS fails to clearly state that the secondary effects outlined in the DEIS is only one possible scenario that could occur and that there could quite possibly be much more significant adverse impacts than those outlined in the DEIS. The failure to make the statement that the effects outlined in the study are only one possible alternative could possibly draw the municipalities surrounding the project into a false sense of security. EDH-20

This office strongly recommends that a section of the final EIS be added, carefully explaining to anyone reading the document that the facts and figures quoted in the document is only one possible set of circumstances and that municipalities should be cautioned not to use the data presented as being the only alternative to growth.

General Questions not Adequately Answered or Other Problems Noted by the Erie County Department of Health that May be Significant

EDH-21 What is the time frame for securing state permits, assuming that the Corps approves the project? We must remind the applicant that construction in Pennsylvania cannot start until they get proper state permits. It may be quite an involved process with respect to solid waste or dams and encroachments, sediment and erosion, etc.

EDH-22 Table 1-29 (i-241, 1-242) If any or all of these chemicals are in the water, what steps will be taken to prevent bioaccumulation in fish or damage to the City of Erie Water Treatment Plant? Perhaps we should require carbon filters or some similar procedure to eliminate organics at the source, rather than try to play catch up later on.

EDH-23 No mention was made of the Lake Sturgeon being on the Federal List of Threatened Species. These fish are known to exist presently in Lake Erie. Published information indicates that (in the past, at least) their presence in the vicinity of the proposed steel mill. They apparently require clean bottoms to feed over. The mill may have an adverse affect on their population. Just because the consultant did not catch any in gill nets, it does not mean that there are none present, as a large specimen quite likely would not be captured by a conventional gill net. We are not attempting to make a "snail darter" issue out of the Lake Sturgeon, but think it should be addressed in the final EIS. It does deserve much more consideration than other species in Lake Erie, due to its precarious status with respect to surviving as a species.

EDH-24 How will the plant impact on the Northwest Erie County Regional Sewer Authority's plans for sewage treatment in the area? If the mill is built, will

it slow down progress with respect to the central plant? We already are in need of sewers and better treatment of waste and would be concerned that a sudden influx of people could further delay this project, as well as adding additional burdens to area waters. Also, it should be stated that revisions to the Comprehensive Waste and Water Quality Management Study will have to be completed if the mill proposal is implemented.

EDR-25 Based on some data we have seen in our section of Lake Erie, we seriously question page 4-593 and 4-594 with respect to some of the "typical" concentrations in Lake Erie intake. For example, we would not consider oil and grease of 1 mg/l to be "typical." Nor, for example, would we accept 0.04 mg/l of ammonia as being typical. The first we would say is on the high side, while the latter we believe is low. The fact that the ammonia in the background appears to be low puts the proposed ammonia discharge under serious question. We also have reason to believe that the listing of copper is on the low side. This could also be significant if synergistic effects are considered. These are not necessarily the only discrepancies we noted in the chart.

EDR-26 Is it possible that the hypolimnion could reach the effluent pipe in summer during a seiche? Information gathered off the Pennsylvania shoreline revealed cold water at about 35 to 42 feet down from the surface at times during the summer of 1978 (see page 4-862).

EDR-27 If gizzard shad die off, will U. S. Steel clean them up? What if there's a massive kill? Will it affect beaches to the east? Gizzard shad decompose very slowly and a massive die-off might have an adverse effect on the tourist trade in the Erie area. (See page 4-808.)

EDR-28 4-600 - EPA criterion is 1 ug/l for phenols to protect water supplies and to prevent fish tainting. Why does U. S. Steel propose to discharge 2 ug/l chlorophenols? We have information that phenols are more toxic in the winter. Has this been considered? Will phenols concentrate under the ice more so that in the summer? On page 4-594, the worst case of 0.1 mg/l (100 ug/l) is 100 times the above EPA criteria and may not be acceptable.

EDR-29 4-680 (4.573) This Department is somewhat concerned over the statement, "However, the runoff, even when treated, will probably contain relatively significant concentrations of heavy metals and trace elements." It appears this may be a problem, especially if the waste discharges to the Turkey Creek diversion channel or goes directly to Lake Erie via the old Turkey Creek streambed. Our question specifically is what is "significant" and what effects will the "significant" discharge have on the receiving waters.

EDR-30 On page 4-539 regarding chemical additives to cooling water, the DEIS indicates additives, including inhibitors, biocides and polymers, will be used. The page says that no additives containing heavy metals will be used. There is not sufficient data available. What will the effects of the organics be on the Commonwealth? We believe this should be included in the EIS. It could be significant.

EDR-31 We look with some concern with respect to the statement on page 4-543. "The effluent would typically be 2°C warmer than the lake water, but could be as high as 10°C above ambient." In 1978, our lake temperature read 76°F (24.4°C). If the temperature were 10° warmer, the temperature of the effluent could be 94°F (34.4°C). If the water were to stagnate, so to speak, aquatic life might be seriously affected. It may not be a problem, but we believe that there should be more of a discussion as to the worst effect on aquatic life.

EDR-32 Also, what would the time frame be on a start-up of operations be? How quickly would the water temperature change after a start-up? We have experienced at least one fish die-off following a "start-up" operation during the winter months.

EDR-33 Volume 1, page V (#5)--15,600 new residents; 5,265 in Ohio and 2,830 in Pennsylvania. Where are the other 7,000 or so people going to live?

EDR-34 Based on increased air pollution, even with BAT, how many more deaths or diseases, such as cancer, can be expected in the general population (e.g., lung diseases, aggravation of existing health conditions, allergies, asthma, emphysema)? See Volume 1, page XI, #26.

EDH-35 Volume 1, page XII, (#8)—No data on loss of vegetation, wildlife, man, farm income. More should be done before the permit is issued.

EDH-36 Volume 1, page XIII, (#17)—If acid rain increases, what will be implications with respect to fish, wildlife, loss of property, corrosion of limestone, etc.?

EDH-37 Will young salmon or trout run into the intake pipe? They may have the urge to run with the current (i.e., as if going downstream).

EDH-38 XII (#8) If synergistic effects cause agricultural losses, how large will the losses be? What will the economic disadvantages be to farmers? Will any compensation be awarded them from anyone? Also, if it is enough to cause plant damage, what about damage to animals or men? Will the incidence of cancer, for example, increase?

EDH-39 IX (#19)—Critical sewerage facilities needs by 1982. What does critical mean? Pollution problems? Where? How bad? Will Chapter 94 and the possibility of building bans affect the plan? If sewers are not available and septic permits are difficult to secure because of soil types, we can foresee problems. Who will finance the plants? We already have problems in Erie County with respect to existing sewerage facilities that need to be upgraded.

EDH-40 IX (#21)—No mention of hunting or fishing. What will impacts on fish and game be? It appears with the plant and secondary development and growth, the game and fish will be under more pressure and the available land areas for hunting and fishing will be decreased.

EDH-41 XIV (#22) For years, we have generally heard that, except for thermal effluents, dilution is not the solution to pollution; however, this seems not to be the case in this proposal. What metals will accumulate in the organisms? What effect will it have on the reproductive potential of the organisms? What effect will it have on commercial fishing activities on Lake Erie, both with respect to quality and quantity of the fish?

In closing, we would like to thank you for your concerted efforts to keep us informed of developments during the evolution of this project. This continuous involvement with the project has proven to be highly beneficial.

If you or your staff have any questions on our comments, please feel free to contact me.

Very truly yours,

Timothy C. Taylor
Acting Director
Division of Sanitary Engineering

TCS/cas

cc Russell Robison
John Toth
Henry Suroviec
James Erb
Ernest Giovannitti
Wes Gilbertson
Richard Zinn

Erie, Penna., July 22, 1974

Mr. Arid . Ludwig,
Colonel Corps of Engineers
Department of the Army
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

Being a members of the Erie County Sportsmens League and Secretary of the Peninsula Boat Access Association, Inc., the items concern may very much relative to the impact the Commercial, and United States Steel Mill will have on the waters of Lake Erie.

First, the ichthyological interests, We are more will be greatly effected by the Mills's location on Lake Erie namely the commercial fishermen or fisheries and the recreational fishing might will happen to the perch and the wall-eye or yellow pike that commercial fishermen rely upon for their livelihood or the small mouth and large mouth bass and other game species that inhabit the Lake and that give so much pleasure to the anglers in the area ?

EDH-1

EDH-2 It is said some fish will be killed by the effluent flowing from into Lake Erie from the Mill even if none get sick, It is almost assured that many more fish will be killed of all species.

EDH-3 Then, We have the Salmonoid family of which the Chinook and the Coho belong, and which are reported at Erie Fish Hatchery by the Pennsylvania Fish Commission for anglers, Insit it or exist fearful to keep conducting an Hatchery when the fish will be killed ?

Second, Millions will be spent by the Presque Isle Co-operative Beach Erosion Control Project and which breakwater contents will be established by the Department of the Army Corps of Engineers.

EDH-4 Since prevailing lake winds are from the northwest what will Lake Currents from Contents do to the swimming beaches of Presque Isle State Park, if the Steel Mill waters are not strictly cleaned before returning [illegible] Environmental control [illegible] ing piscatorial matters is key, serious unless strict operating control s of plant effluents is conducted.

Can adequate answers be obtained to satisfy those interested in the aquatic life of Lake Erie, which was once declared dead, but has been revived to a remarkable state of health. Let's keep it that way.

Your reply will be appreciated.

Sincerely

Mrs. Mentz,
3025 Holland Street, Erie, Pa., 16508

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

SEP 07 1978

Colonel Daniel Ludwig
District Engineer
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

In response to your letter dated May 22, 1978, we have reviewed the Draft Environmental Impact Statement (DEIS) for the U.S. Steel Lakefront Plant, east of Conneaut, Ohio and extending into the Commonwealth of Pennsylvania. It is evident that considerable time and resources were expended on the preparation of this DEIS. Certainly, it is one of the most extensive documents we have reviewed.

As originally agreed, EPA has participated in the early review of various documents such as the Draft Environmental Assessment, working papers and separate studies conducted by other consultants including Dr. Berry, Aquatic Ecology Associates, D'Appolonia, etc., in addition to numerous meetings and site visits. However, many of the numerous concerns expressed by EPA at these meetings and during the development of the Environmental Assessment have not been adequately addressed in the Draft EIS. It appears that our earlier coordination has not been as successful as anticipated.

The DEIS contains extensive and sometimes excessive information, however it is deficient in some critical areas. Specifically:

EPA-1 1. A major deficiency is the air quality modelling which does not take into consideration the background air levels which would result from the proposed COHO power plant in Erie County, Pennsylvania. The sponsors of the COHO facility have submitted a PSD application to our office. In the absence of an adequate evaluation of the air increment issue by U.S. Steel in the Draft EIS this issue remains unresolved.

EPA-2 2. EPA along with other agencies have concerns regarding the utilization of low population projections which may not realistically represent the future situation. The effects of increased population upon solid waste disposal, sewage treatment facilities, domestic and industrial water supplies and other associated infrastructures may be greater than indicated in the Draft EIS.

EPA-3 3. The project area is a non-attainment area for ozone. Existing sources of hydrocarbons in the area will have to be reduced through State approved implementation plans to offset the increased emissions from the proposed U.S. Steel facility.

EPA-4 4. Only minimal discussion of alternatives to the Turkey Creek modification is contained in the draft statement. This is in spite of the concern that has been expressed on numerous occasions by EPA and others.

EPA-5 5. The DEIS fails to evaluate alternative water pollution treatment systems which could reduce concentrations of ammonia and phenol in the discharge.

EPA-6 6. Potential stagnant conditions from the proposed pier extension in Conneaut Harbor have not been adequately addressed.

EPA-7 7. Measures to minimize adverse impacts to aquatic life are not included with the biological impacts associated with the location and design of the water intake structure.

This is a summary of the major issues taken from our detailed comments which are enclosed. We are hopeful that, through the continued cooperation of the concerned parties, satisfactory resolution of these issues can be reached and the EIS process can be successfully completed. We believe that these issues will have to be resolved prior to the approval of the necessary Federal permits.

In accordance with our responsibility to inform the public of our views on major Federal actions, we have classified our comments as Category ER-3. Specifically, this means we have environmental reservations about the project and inadequate information is provided in the Draft EIS to adequately address the impacts of this project upon the environment. This classification and the date of our comments will appear in the Federal Register.

The enclosed comments are a summary of the issues that have been consolidated primarily from the reviews of U.S. EPA Region III and Region V. Input was also obtained from our offices in Washington, D.C. If you have any questions concerning our comments, please contact Mr. Donald Wallgren at 312/353-3808 (Region V) or Mr. Nicholas DeBenedictis at 215/597-3654 (Region III).

Sincerely yours,

Jack J. Schramm
Regional Administrator
Region III

Valdas V. Adamkus
Acting Regional Administrator
Region V

Enclosure

Population

EPA-8 The secondary population growth or plant-induced population still appears to be rather low which consequently minimizes all subsequent impacts. A. D. Little should run their assessment procedure for a larger induced population.

EPA-9 Page 2-137. "It should be noted that assumptions concerning net migration and fertility rates were chosen to present a conservative (low) projection and so that worst case impacts could be developed. If baseline population levels were higher than those described in this section, population impacts attributable to the plant would be less significant relative to total baseline population and to baseline population growth rates." The assumptions made by A.D. Little in determining baseline population and growth rates appear acceptable at first glance. But, actually this assumption is misleading and may be incorrect. If baseline is low, it is true that plant impacts will be of a larger magnitude when compared to the total new population. But, if the baseline is higher, then although plant related population will appear to be a smaller percentage of the total new population, this total will be a larger number. It is this larger number that must be assessed in view of area capacities.

EPA-10 At the July 11, 1978 hearing in Conneaut, Ohio, an A.D. Little representative cited the Lordstown industrial complex as an example of a new large facility (10,000 employees) that did not create extensive secondary development adjacent to the facility and di not attract a significant number of new residents to the area. The analogy d:awn is not appropriate as the GMC facility was constructed in a large urban area (Mahoning-Trumbull Counties) with an established infrastructure of roads, schools, service industries, and more important, declining industrial employment as a result of a steady decline in the steel industry. The Conneaut area has few, if any, of these factors in its favor.

EPA-11 The above discrepancies illustrate the complexities involved in projecting population growth. To adequately address this basic problem, it would be more accurate to present a range of projections, perhaps low/medium/high, corresponding to different growth scenarios. This methodology would allow for a more realistic analysis for predicting the impact of population growth.

Domestic Water Supply

EPA-12 Section 4.614, Domestic, Public/Commercial, Leakage (DPL) Water Use Impacts relates "Since adequate water supply sources exist, the impacts would be primarily financial." Adequate water supplies only exist from Lake Erie and then only if water treatment plants are upgraded. If a central water system is not built before population begins to enter the area there could be a serious water problem. At present, no central water system exists in the communities expected to receive the greatest growth. The greatest ground water supplies are in the southeast Regional Study Area where the majority of the incoming population are not expected to locate.

EPA-13 Section 2.679 uses unreferenced numbers. What is the origin of 594 gpd? How was it determined?

EPA-14 Section 2.683, "Water Use" - It is possible that the Pymatuning Reservoir which is currently used for flood control and recreation could also have potential as a source of water supply. This should be addressed in the final impact statement.

EPA-15 Chapter 4-356, "Water Supply Infrastructure" - The total estimated costs of operation are based on a 25 year bond at 5 1/2% interest. The discount rate published by the Water Resources Council is 6 5/8%. This rate is to be used by all Federal Agencies in the formulation and evaluation of plans for water and related land resources for the period October 1, 1977 through and including September 30, 1978. An explanation should be given concerning why 5 1/2% was used in lieu of the 6 5/8% rate.

EPA-16 Chapter 2-921 - It is stated in "Regional Study Area" section that an alternative estimate for domestic water use in Erie County for 1971 was considered too high. Explanation should be given to the incorrect assumptions or methodology used in calculating the estimate. Is it possible that the domestic water use estimate in the Pennsylvania portion of the Regional Study Area in 1975 was too low? The number 27.24 mgd is taken from the Assessment and does not correlate with other values given in this section. Why do water requirements differ from those used in the Assessment?

EPA-17 Those suppliers drawing their water from the ground water wells are getting a maximum of 10 gpm in the study area. This will not be sufficient to handle the population influx if the water is used for other than domestic purposes.

Sanitary Sewer Plans

EPA-18 Chapter 4, page 4-369, Section 4.309: In this section an assumption was made that Springfield Township and/or East Springfield Borough may decide to tie into the proposed Northwest Erie County Sewer Authority's facilities. It is unlikely that this will occur, since Springfield Township and Borough are not a part of the Northwest Erie Facility Plan study area. A more valid assumption would be Springfield Township and Borough constructing their own sewage treatment plant (STP) and interceptors.

EPA-19 Chapter 4, page 4-371 - Funding by Pennsylvania for an approved facility plan for Springfield Township by 1980-81 is not possible. There is little or no money available for the funding of new Step 1 applications for sewage treatment plants. Springfield Township would most likely not be funded until 1982.

EPA-20 Chapter 4, page 4-377, Section 4.315: The assumption that EPA will fund new STP's for newly developed areas is not necessarily true. Under the new Act and the guidelines of PRM 78-9, EPA is advocating the consideration of alternate systems other than centralized sewerage treatment systems. In view of this, Tables 4-191 and 4-192 should be amended.

EPA-21 It is noted on page 2-449, that most municipalities have oversized interceptors. This may be correct, but it points out the need for close coordination of the secondary impacts of this facility on the manner of solving the existing and new residential wastewater treatment problems. Solution in this area must be in terms of relevant existing priorities, and eligibilities for increased facilities, in keeping with the Public Owned Treatment Works treatment goals of the 1977 Amendments.

EPA-22 Chapter 4, page 4-381, Table 4-193: The estimated "Sewer bill per household": with the assumption that the treatment plant will get 75% federal funding, is extremely high ($200-$300 per year). The figures in this table represent the total impact area and were estimated in 1975 dollars. In order to present a true picture, these figures should be updated to reflect current trends.

EPA-23 The City of Conneaut, Ohio, in accord with the Clean Water Act, is presently developing a 201 Facility Plan. The effluent discharge from the existing wastewater treatment plant is not meeting current Water Quality Standards, and the outfall is subject to lake elevation changes which effects the capacity of the final settling tanks. The proposed U.S. Steel plant will impact the population of the City of Conneaut, thus impacting the wastewater flows to the treatment plant. It is suggested that the City and U.S. Steel look at the possibility of combining their waste effluents and discharging them through the U.S. Steel outfall into Lake Erie. Benefits from such an arrangement could include dilution of flows, if compatible, capital cost savings for the City, reduction of inshore pollution from the City's existing outfall, and correction of the City's problem with lake elevation effects on the treatment plant. It is recommended that the City and U.S. Steel, by way of the Facility Plan and EIS respectively pursue the possibility of a common outfall and treatment for their mutual advantages.

EPA-24 Page 4-375. The 1.0 mg/l effluent phosphorus concentration for effluent in Erie, Pa., has not been met in the last several years, e.g., 1977 - 1.8 mg/l, 1975 and 1976 - 2.2 mg/l. Recent enforcement action in Lake Erie also indicates that there may be other treatment problems. Phosphorus should be limited. A 0.5 mg/l concentration is not an unrealistic limit that should be imposed, along with an appropriate load allocation.

Energy

EPA-25 Page 2-542. "According to the Pa. PUC, any increased demand in the Regional Study Area would be met by transmitted power from Homer City Station, other generating stations in the Penelec system and imported power from Ohio and New York State." If this is so, why does Penelec say that Coho I is needed now to meet energy demands? According to reserve figures found on Table 2-255 on page 2-547, PPC has sufficient reserve capacity for the next ten years which could be sold to plant-related consumers. It appears obvious that energy demand forecasts for this region differ. The energy demand question for the regional study area should be addressed by the applicant.

EPA-26 Page 4-438. The report relates steel plant impact on electrical demand to the impact on the total capacity of Penelec. This methodology of reporting impacts is rather misleading. It does not indicate how this will impact Penelec's capability of supplying electricity to the "new-comers" in this area or how it will affect Penelec's reserve capacity on the whole.

Transportation-Related Impacts

The scope of discussion on transportation-related impacts is generally adequate but some aspects need to be clarified or expanded to allow full evaluation of impacts. Furthermore, a more detailed and assertive approach is needed to reduce the considerable vehicular traffic impacts identified. The areas warranting further revision in the final statement are outlined below.

EPA-27 The statement on page 4-415 that the network roadways have sufficient capacity to handle the additional volumes does not appear to be substantiated. In fact, in the discussion of the preferred action for delivering and dispersing traffic to and from the U.S. Steel site, it is clearly shown that several of the major intersections will be operating under Level of Service F (Forced Flow).

EPA-28 Page 4-419 identifies certain measures which could be instituted to improve traffic conditions, but does not discuss if these measures will be pursued. These possible mitigation measures are also briefly and individually discussed on pages 5-20 and 5-21, and it is indicated that congested conditions would continue even if they were implemented. Unfortunately, no detailed intersection traffic analysis is provided to substantiate this indication.

EPA-29 The final EIS should further develop its plan to mitigate the project-related traffic congestion. Even though individual measures might not in themselves resolve the traffic congestion, some combination of them might be effective.

The final EIS should study such combinations and any conclusions should be backed by analyses similar to those that identified the problem, i.e., - resultant traffic levels and levels of service due to various mitigation schemes.

EPA-30 The discussion on pages 4-545 and 4-550, and Table 4-264 on page 4-553 do not make it clear to the reviewer what the total CO concentration will be at the selected receptors; nor is the exact location of these receptors made evident. Furthermore, the brief discussions on pages 4-545 and 4-550 do not indicate what meteorological inputs were used in the modeling, nor if the interactions and receptors selected are reflective of the worst case.

EPA-31 The Hiway model calculates only traffic-related concentrations. Worst case CO impacts at the receptors would be the sum of the traffic-related concentrations. Therefore, the table on page 4-553 should be revised to demonstrate total carbon monoxide concentrations at the receptors (worst-case transportation-related plus worst-case background levels).

The final statement should also indicate the meteorological assumptions made in the modeling. Wind speeds of one meter per second, atmospheric stability class E or F, wind directions nearly parallel to the principal line source, and winter temperatures are usually adequate for an appropriate "worst-case" EPA-32 CO analysis. Other factors can be used only if there is sufficient historical data to thoroughly substantiate them as more representative of true "worst case" conditions.

The final EIS should also indicate on Figures 4-451 and 4-452 the exact location of the receptors, their distance from the highway, and the rationale for their selection. In light of the analysis on traffic levels and levels-of-EPA-33 service on pages 4-414 through 4-419, it might also be appropriate to determine worst case microscale highway related CO concentrations at the intersections projected to have Level of Service F.

Noise impacts resulting from traffic level changes appear minimal. However, similar to our request on the air analysis, we believe that the final EIS should include a description of the inputs used in the noise modelling. Specifically, we are interested in the truck percentages and the speeds used. It appears that there will be minimal impact at 100 meters from the highways. As long as there are no sensitive receptors within this distance, it appears EPA-34 that we will have no objections to the project from a noise standpoint. However, if there are receptors closer than 100 meters, the final EIS should identify them and calculate the noise impacts at the closer distance. The EIS should also more clearly identify which receptor is reflective of noise level changes associated with the Conneaut Business District, where page 4-419 states that heavy traffic would pass.

Turkey and Conneaut Creeks

EPA strongly opposes the proposed relocation of Turkey Creek. Turkey Creek EPA-35 has been shown to be a valuable, somewhat unique aquatic resource. It is habitat for such clean water fishes as Coho Salmon, Chinook Salmon, Brown Trout, and Rainbow Trout. It appears to be a spawning area for some of the above species as well as for various pike, bass and minnows. The creek is one of only nine coldwater streams in the entire state of Ohio. It is one of only two such streams with its mouth on Lake Erie. While Turkey Creek is not quite as unique in Pennsylvania, it does represent a valuable, relatively unspoiled stream and its destruction represents a major adverse impact.

The proposed relocation involves transforming the present natural stream into a drainage ditch. Such a transformation is unacceptable for the following EPA-36 reasons.

The design of the ditch would reduce the length of the stream from its current 96,000 feet to 79,000 feet.

The ditch would not provide even the basic elements of viable aquatic habitat. The desirable species which presently occupy Turkey Creek require relatively clean, clear water; gravelly, rocky substrate; submerged grasses; favorable riffle/pool ratios; stream bank and in stream cover; and a diversified, healthy population of benthic invertebrates to survive. The proposed ditch would supply none of the above. The ditch would have a silty, unstable substrate which when coupled with expected water quality would support nothing but the most pollutant tolerant organisms. Because the ditch would not be bordered by tree cover, water temperatures are likely to rise and as a result dissolved oxygen concentrations would drop. For the first 14,000 feet of ditch, the water within it, according to the EIS, would be relatively stagnant, allowing it to heat up and concentrate pollutants. Because the stream bottom in this section and others would consist of newly exposed, chemically reduced sediments, oxidation would occur resulting in reduced aquatic D.O. and increased pollution. The flat, unriffled bottom would do little to increase D.O. Finally, the last 2000 feet of channel would have an extremely steep gradient which would create a barrier to fish migration.

The ditch has the potential to significantly effect unaltered portions of Turkey Creek and other streams. Upstream areas of Turkey Creek currently utilized as spawning and nursery ground by many species of fish would be unavailable. The ditch would accelerate watershed drainage thereby leaving untouched streams with less flow during low flow periods. This decreased flow may destroy habitat and increase water pollution.

EPA believes that alternatives are available to mitigate or prevent the loss of Turkey Creek. A detailed evaluation of the following alternatives should be provided:

a. Reduced Plant Size and Preserved Stream - If it is decided that the Conneaut site is to be the only site considered, the applicant should address EPA-37 the possibility of scaling down the facility. There is no discussion of this alternative in the DEIS. Such a size reduction may allow construction of a plant on the site without unacceptable impacts. Turkey Creek and associated site wetlands could be left intact with adequate buffer areas between them and the plant to preclude their serious environmental impact. A smaller plant would also greatly other location alternatives.

b. Buffered Stream - If the plant size is to remain as proposed, a EPA-38 buffer area should be left between the Creek, site wetlands, and the facility. While the applicant states that this concept is undesirable, there are no concrete reasons or evidence of detailed study which preclude its implementation.

On page 6-3 and page 6-68 of the DEIS the applicant states that shifting of facilities to avoid Turkey Creek is feasible. However, plant efficiency may be reduced. From the discussion presented it does not appear that the efficiency reduction is severe.

The applicant states that particulate emissions and storm water drainage will destroy the stream if it is left in close proximity to the plant. EPA believes these pollutant sources can be controlled through air pollution control technology and storm water management programs.

EPA-39

In further defense of not preserving the Creek, the applicant states (page 6-69) that even if the Creek were to remain intact, no public access would be allowed. Therefore, it would be of no benefit to hunters and fishermen. EPA strongly disagrees with this statement. The off site benefits of the stream may be substantial. Fish and wildlife are mobile and can be harvested outside of the site. These creatures also play a role in a much broader food and ecological web.

The above buffer strip concept has been discussed with the applicant in a more detailed manner during pre EIS liaison. Through interagency coordination it has been tentatively suggested that a good preliminary concept would be to preserve at least three of the site's most productive wetlands. They are located in the areas north and west of the intersection of the Penn Central railroad tracks and Elmwood Road; east and west of Crayton Road adjacent to the north side of the Penn Central tracks; and southeast of the intersection of Rudd Road and the Penn Central. All of the above wetland areas consist of moderate to dense stands of inundated red maple interspersed with aspen and hemlock. These areas are excellent habitat for woodduck and woodcock and should be preserved. They also provide storm water storage and pollutant assimilative benefits.

EPA-40

Turkey Creek should be maintained in its natural state with the terrestial habitat adjacent to it protected. As a preliminary recommendation, it was suggested that a greenbelt area should be maintained up to the 630-foot (USGS Topographic Quadrangle) contour between Lake Erie and the abandoned Bessemer and Lake Erie Railroad spur and above this point to the 640-foot contour. This concept should be studied in detail to determine its environmental feasibility. If needed expansion of the buffer area should be considered, the applicant should base buffer strip requirements on the need to avoid stormwater and particulate pollution of Turkey Creek. Prior to the acceptance of the buffer area concept erosion and sedimentation plans must be reviewed. These plans must be tailored to keep silt, construction debris and slag waste out of Turkey Creek. They must simultaneously maintain sufficient flow in Turkey Creek to provide good aquatic habitat. Only plans which direct polluted runoff away from Turkey Creek can be acceptable. This polluted runoff could receive treatment to reduce organic and inorganic pollutants to acceptable levels prior to its discharge.

EPA-41

Control techniques for fugitive dust should be defined. The possible relocation of dust prone areas downwind of Turkey Creek should be considered.

EPA-42

c. Greenbelt with Relocated Creek - EPA would consider the alternative of the relocation of Turkey Creek if it was performed in an environmentally sensitive manner. Such a relocation should ensure the maintenance of site wetlands. The relocation and recreation of Turkey Creek as described in the DEIS is a step in the right direction but does not adequately mitigate aquatic habitat losses. After relocation w/incorporation of fishery enhancement structures there is no guarantee that a viable stream will result. In addition to the problems which may result due to improper engineering (problems include excess scour, stagnation, sedimentation, bank instability, etc.) the new stream would be subject to many of the same storm water drainage and air pollution particulate deposition problems as a preserved stream. Furthermore, while at lease 33,000 ft. of Turkey Creek would be destroyed, only 16,000 ft. would be recreated. This leaves a net loss of 17,000 ft.

EPA-43

A perhaps better relocation scheme has been proposed by D'Appolonia, Inc. The proposal involves relocating the Creek to the East, with a new mouth created on Lake Erie. Fishery enhancement structures would be placed in a stream channel constructed to reproduce natural conditions. While this study shows promise it has at least four serious pitfalls. First, the new channel would be 10,000 feet shorter than the existing waterway. Second, there is no guarantee of success. Third, the complete D'Appolonia study has never been made available to environmental agencies. Fourth, fur .e plant expansion may threaten a relocated stream.

Prio: to approving any relocation scheme the complete D'Appolonia study must be received and reviewed by EPA. If ecologically sensitive channel relocation is to be done national experts on the methodology should be consulted for specific design details. Soils studies to determine areas of promise for new channel location must be conducted. Attempts should be made to increase the length of any new channel so that it is as long as the old waterway. The water quality and habitat of any crested stream should be at least as good as existing Turkey Creek. This would necessitate the insurance of stable gravel and cobble substrate, good riffle/pool ratios, good stream vegetative cover and stable side slopes. Only a full commitment by U.S.S. and environmental agencies to create a viable waterway will result in success. As this type of creation is relatively a new routine, which cannot be achieved overnight, the above commitment must be made for a period of years.

EPA-44

d. An alternative which should be evaluated, by itself or in connection with other alternatives, is a mitigation plan, acceptable to the concerned Federal and State agencies, to compensate for the loss of part or all of Turkey Creek.

EPA-45

The plan could concentrate on enhancing and improving existing aquatic resources in the project area and instituting some measures that would minimize or prevent water quality degradation from occurring as a result of secondary development.

Part of the mitigation plan could include Dr. Andrew White's recommendation that U.S. Steel be required to protect and increase a potential spawning habitat in and around the mouths of Conneaut Creek and Raccoon Creek, as well as along the lakefront. Another measure, to enhance Conneaut Harbor, would be to divert Conneaut's waste water discharge to an area outside of the Harbor. A number of innovative enhancement measures could be developed for mitigation. Although this mitigation approach has been mentioned in our comments on the environmental assessment, we have yet to see the applicant propose any measures that could be included in a mitigation plan.

EPA-46 The alternatives should be compared for feasibility including both environmental and economic costs and benefits. These should encompass all major aspects of such plans. For instance, the fundamental benefits of preserving or reconstructing a major environmental and recreational resource for the region as opposed to the total costs of the project. Who can, (and who should) pay for different elements of environmental maintenance and improvement? What would be ongoing costs and/or benefits and revenues?

It is also believed that the design and planning disciplines of landscape architects might contribute to the study at this stage, providing innovative and comprehensive methods to make one or more of the alternatives work for both steelmaking and environmental objectives.

EPA-47 If it becomes evident that the proposed U.S. Steel facility cannot be constructed without a satisfactory resolution of the Turkey Creek issue, EPA will be compelled to recommend denial of any Corps of Engineers Section 10/404 permit application advertised for the proposed facility.

EPA-48 Should this occur it is recommended that the plant be located at some other site. Site investigation should not be restricted to areas owned by U.S. Steel. Alternatives in this vein would include upgrading existing U.S. Steel facilities, locating the plant at an existing abandoned industrial facility, or relocating to a previously undeveloped site of less environmental sensitivity.

Stream Water Quality

EPA-49 Page 2-791 - Ohio WQS - Section 2.607 fails to identify the fact that special standards apply to Conneaut and Turkey Creek; both have been designated specifically as "Coldwater Habitat." This designation applies more stringent Water Quality Standards (WQS) for several parameters. Lake Erie WQS are also a special category.

EPA-50 Page 2-793 - "Proposed" revisions of Ohio WQS were adopted at the State level and became effective on February 14, 1978. USEPA has approved portions of the standards as of August 9, 1978. The remaining portions are undergoing revision by the Ohio EPA or promulgation by the USEPA.

EPA-51 Page 2-795 - Section 2.613 - While USEPA does not establish uniform national water quality standards, the Agency under FWPCA Amendments of 1972 and the Clean Water Act of 1977, is charged with ultimate responsibility for establishment of acceptable water quality standards in every State.

EPA-52 Page 2-815 - Table 2-340. According to Section 2.623, page 2-812, the average annual flow of Turkey Creek is about 0.28 m/sec. Why was it omitted from Table 2-340? Turkey Creek is a significant stream.

Conneaut Harbor Pier Construction

EPA-53 We recognize Conneaut Harbor as being extremely valuable to the Lake Erie fisheries. The environmental impacts of the proposed construction of a pier facility in Conneaut Harbor should be described in more detail. The applicant, while adequately describing the proposed solid fill pier, does not give a clear description of the aquatic environment within the Harbor. On page 5-44 the applicant describes certain zones of the Harbor as spawning and nursery areas. What species are present? How extensive of a spawning area is it? What substrate exists?

EPA-54 A solid fill pier will destroy aquatic habitat and effect water circulation in the Harbor, possibly creating stagnant conditions.

EPA-55 The proposed pier design may be unacceptable. The applicant should evaluate open pile structure to avoid habitat destruction and circulation disruption.

EPA-56 Conneaut Harbor and Conneaut Creek are very important areas biologically. It is believed that the entire plan presented by U.S. Steel could be vastly improved by diverting all treated construction runoff, and operating discharges and runoff from Conneaut Creek to Lake Erie.

EPA-57 Conneaut Creek is of relatively high quality and a valuable coldwater designated stream in both States. Secondary development resulting from the project is expected to increase population in the watershed. The construction and/or expansion of wastewater treatment plants will have water quality impacts. A discussion of the impacts on Conneaut Creek should be provided including a discussion of potential impacts of discharges particularly with respect to dissolved oxygen levels, temperature and chlorination.

Intake and Discharge Structures

EPA-58 The data and analysis in the Draft EIS leave little choice but to reject the intake as presently located and designed pursuant to Section 316(b) of the Clean Water Act. The present design does not minimize impingement and the present location may be unacceptable from the entrainment standpoint.

EPA-59 It may be possible to eliminate impingement entirely by using 3/8" mesh screening at the intake. Alternative intake designs incorporating 3/8" mesh or smaller screening may be feasible but may develop operational problems such as plugging from debris, cladophora or frazzle ice.

EPA-60 Additional aquatic sampling is necessary to establish whether or not another location would significantly reduce entrainment. The cost of lengthening the pipe and associated problems should also be given. If the water withdrawal can be further decreased, then relocation of the intake may not be necessary.

Sediment and Benthic Ecology

EPA-61 A description of the dredging methods to be used in the pipeline and pier construction and deepening was not evident. The proposed methods must be included. Further, an analysis of alternative dredging and construction methods must be addressed. For example, an alternative method to dredging for the pipeline trench is the use of an underwater plow, which may be more economical than conventional dredging and may cause less resuspension.

EPA-62 Page 2-1011. The second paragraph indicates that a 2°F increase "may have augmented water quality." This should be clarified.

EPA-63 Page 2-1012. The discussion of the anoxia conditions, as based on a credible scientific source, would nevertheless, be better presented by outlining the recent history of the hypolimnetic anoxia.

i.e., 1973 - 93%

1974 - 87%

1975 - 4%

1976 - 63%

1977 - 74%

EPA-64 a) The data in Table 2-414 are incorrect. The ammonia and phosphorus values are too low. The TKN values are either high or low, and many of the mercury values apparently are high. The data in Table 2-413 are much more reasonable. The problem is: Were the analyses done improperly the first time? If so, this may cast doubt on the validity of all of the chemistry data submitted by Aquatic Ecology Associates.

EPA-65 b) Elutriate tests should be performed on all of the samples. This is especially true for those in the areas of the pipelines, where the material may be rehandled twice (to dredge the trench, then to cover the pipeline).

EPA-66 Page 4-580 - part 4.491. The water quality effects of the dredging and blasting should be estimated - another example of the need for elutriate testing. "Dredged material will be deposited at a designated upland location" - where is this site and is the size suitable? A full discussion of the disposal site, possible alternatives, and environmental effects must be included.

EPA-67 The Region V guidelines include field observations, elutriate testing, and macroinvertebrate analysis as well. Furthermore, the mercury and PCB guidelines in Table 2-416 are not cited correctly. If mercury or PCB's exceed the levels shown, the sediments are considered heavily polluted no matter what the other parameter concentrations may be. This is not made clear in the table. It is suggested that the entire Region V guidelines be included exactly as published to eliminate misrepresentation.

EPA-68 The data in Table 4-275 should be presented in mg/kg dry weight to allow easy comparison with Region V guidelines.

Shoreline Impacts

EPA-69 Section 4-407, "Shoreline Impacts" - Why is the statement made that the increase in shoreline erosion is only temporary? It has been mentioned that there are no plans to stabilize the shoreline and as long as construction and every day activity at the plant take place, shoreline erosion will always be greater than would be expected without construction.

EPA-70 The subject of impervious surfaces was mentioned briefly, however, it is felt that subject should be addressed more adequately. With 80% of the site area containing highly erodable soils and with 1300 acres of this land being involved in construction activities, the increase in impervious surface will significantly impact the already erodable soils. It is not sufficient to just say increases in runoff will result. Calculations should be made to predict the increases in runoff associated with the increased impervious surface and subsequent increases in erosion that can be expected.

EPA-71 Stabilization of the Shoreline Bluffs (Section 4-409) should be a priority. After reading all related sections, it does not appear the bluffs will continue to erode at baseline conditions but will be accelerated due to plant construction and associated activities. If bluff erosion is accelerated, it will not only impact the shoreline but the site itself.

EPA-72 Chapter 1-273 - This section on "Shoreline Protection" states that some type of erosion protection will be required but the type or quantity has not been determined. It is also stated that such information will not be available until the detailed design for the proposed plant is worked out. A discussion of alternative plans for shoreline protection is both warranted and necessary at this time.

EPA-73 There appears to be a contradiction in Section 4.411. The Section states, "When development reaches a stable level, average erosion rates in these areas would likely drop below original values as a result of the protective presence of pavement and structures." Two sentences later the Section states, "The removal of vegetation during construction and the paving and developing of land tends to increase volume of runoff and therefore greater overland flow, erosion would be increased in those areas not covered by impervious surfaces."

EPA-74 Section 2-542, Erosion - The calculation of the average annual erosion rate and how it is applied is questionable. A majority of the numbers used to determine the erosion rate is not explained. For example, 1) What does the number 1.13×10^{-4} represent and where did it originate? 2) There is no explanation given as to how runoff coefficients and sediment delivery ratios are determined. 3) Intensity of rainfall, which is one of the most important agents in erosional processes, is not even mentioned. Also, as stated in the section, the erosion rate of 135 tons/acre - year is approximate. To apply this number to all 8 drainage basins each having varying geology, topography and land use is unquestionably inaccurate. These numbers should not be used unless more clarification is presented.

EPA-75 Urban land use should be considered in this section because there will be greater runoff associated with the increase in impervious surface and therefore greater potential for erosion once water reaches uncovered land or streams.

EPA-76 Chapter 1-286 - It is stated in the section "Construction Pollution Control Plans," that although no specific plans have yet been developed to control pollution during the construction phase, the applicant is cognizant of the need and is currently developing detailed plans to achieve such control. These plans should be discussed at this time.

Future Steel Plant Expansion

EPA-77 The applicant should identify the maximum potential for the site in terms of steel making at least to the year 2020. This would provide some insight into what may ultimately happen to the area.

Compliance with the EPA Prevention of Significant Deterioration (PSD) Regulations

On June 19, 1978 (43FR26388) EPA promulgated final PSD regulations which incorporate the requirements of Part C of the 1977 Clean Air Act Amendments.

The PSD regulations establish specifically defined air quality Class increments. The increments apply to total suspended particulate (TSP) and sulfur dioxide (SO_2) air pollutants. The air quality Class increments allow for specific amounts of increased SO_2 and TSP levels above existing air quality as long as National Ambient Air Quality Standards (NAAQS's) for these pollutants are not violated. Further, no violations of the PSD air quality Class increments may occur.

The PSD regulations apply to 28 specific categories of stationary sources and other "major emitting facilities". The proposed U.S. Steel Conneaut Plant is subject to the June 19, 1978 PSD regulations and therefore, before construction of the Conneaut Plant may be approved, compliance with the provisions of the PSD requirements must be assured. Presently, and until such time as States have the authority to administer the PSD regulations, EPA administers the PSD regulations. In the case of the U.S. Steel Conneaut project, approval pursuant to the PSD regulations must be obtained from EPA prior to construction.

Once a PSD air quality class increment is consumed, no additional new source construction may be allowed to construct until reductions in existing TSP or SO_2 emissions are achieved to expand the increment(s). In the event that a source or combination of sources consume the PSD increment(s), EPA must notify the Governor of the affected area that the increment(s) has been consumed. Further, no source or combination of source(s), when two States are involved in an interstate dispute over increment consumption, can be approved for construction if they would consume over one-half of the total increment(s) at the State line. In these instances the Administrator intends to restrict increment consumption to equal amounts at the State line.

When increment(s) consumption does not involve interstate considerations, incremental consumption is normally allocated on a first come, first served basis. This has historically been the EPA position on this matter. However, while EPA is administering the PSD permit program, the Administrator will solicit and give careful consideration during the permit process to the views of State and local officials regarding the impact of proposed permit decisions on an area's potential for economic development.

In the same geographical area (approximately five miles southeast) as the U.S. Steel Conneaut project is proposed to be located, the General Public Utilities Service Corporation (GPUSC) proposes to construct a six hundred and fifty (650) Megawatt coal-fired steam generating station (COHO). The GPUSC COHO facility is subject to the June 19, 1978 PSD requirements. The GPUSC has submitted a PSD application to EPA for approval to construct the COHO facility. GPUSC is the first and only application that has been received by EPA which would impact upon TSP and SO_2 incremental consumption in the geographical area of the proposed U.S. Steel Conneaut and COHO facilities. EPA is currently reviewing the GPUSC COHO application to determine compliance with PSD requirements.

Air quality impact modeling analyses submitted by GPUSC indicate that the operation of the proposed COHO generating station will consume twelve (12) percent of the twenty-four (24) hour and one (1) percent of the annual TSP Class II increments and thirty-two (32) percent of the three (3) hour, fifty-eight (58) percent of the twenty-four (24) hour and eight (8) percent of the annual SO_2 Class II increments. Consequently, the operation of the proposed COHO facility will not cause any violations of the applicable PSD increments.

The PSD regulations require that any other proposed new source which proposes to locate in a geographical area where consumption of the increments has occurred or will occur prior to that source's construction, that the new source analyze the total and combined impacts upon allowable PSD Class increments. It is possible that the combined impacts of both the COHO and Conneaut projects could cause a violation of either the TSP or SO_2 Class II increment.

EPA-78 Because of the above, EPA recommends that the Environmental Impact Statement on the proposed U.S. Steel Conneaut facility include an air quality analysis of the combined impacts of both the Conneaut and COHO TSP and SO_2 emissions upon the allowable TSP and SO_2 air quality Class II increments. To cite the Preamble of the June 19, 1978 PSD regulations, "(that) whenever any proposed source or modification is subject to action by a Federal Agency which might necessitate preparation of an environmental impact statement pursuant to the National Environmental Policy Act (42USC 4321), review by the Administrator conducted pursuant to this section shall be coordinated with broad environmental reviews under that Act and under Section 309 of the Clean Air Act to the maximum extent feasible and reasonable."

Compliance with Interpretive Ruling (Emission Offset Policy) Regulations

There is general discussion, in Sections 1.414 through 1.422 of Volume 1, regarding the requirements of the EPA emissions offset policy. However, in none of the Volumes is there adequate discussion as to how U.S. Steel plans to obtain the necessary emissions offsets. Specifically, the area in which the proposed Lakefront plant is to be located is a non-attainment area for ozone. Non-methane hydrocarbons (NMHC) are major contributors to the ozone air quality levels. The Lakefront plant has been determined to be a major source of NMHC. Therefore, NMHC emission offsets must be obtained to more than offset the NMHC emissions resulting from the operation of the U.S. Steel Lakefront plant. There are alternative measures (stationary source controls, transportation control plans) which may be implemented to obtain the necessary NMHC emission offsets resulting from the operation of the Lakefront plant. The Environmental Impact Statement should discuss what measures will be taken to assure that acceptable and approvable NMHC emission offsets
EPA-79 will be obtained for the proposed Conneaut project Further, this section should include how U.S. Steel will comply with all other conditions of the December 21, 1976 Interpretative Ruling and Section 129 of the 1977 Clean Air Act Amendments.

It is stated in the document "the entire State of Ohio has been determined to be a non-attainment area for oxidants by the U.S. EPA." This is not true. However, Ashtabula County has been designated non-attainment. The high ozone levels measured at the proposed site are supported by the 1977 Conneaut data. There, 255 observations (3.6% of the total) on 60 different days exceeded the standard. These high levels indicate that the construction of a steel plant with its attendant hydrocarbon emissions from coke ovens would be inadvisable (if not illegal) unless satisfactory offsets can be effected. Section 110(a)(2)(I) of the Clean Air Act states that, for a State Implementation Plan to be approved,"....after June 30, 1979, no major stationary source shall be constructed or modified in any non-attainment area (as defined in Section 171(a) to which such plan applies, if the emissions from such facility will cause or contribute to concentrations of any pollutant for which a national ambient air quality standard is exceeded in such area, unless, as of the time of application for a permit such plan meets the requirements of part D (relating to non-attainment areas)."

EPA-80 Ambient air quality standards are exceeded at numerous locations in Ashtabula and Erie Counties. Maps indicating all non-attainment and PSD Class I areas should be provided in the document. These locations and site codes are needed to properly evaluate the background data.

EPA-81 2-735 - The sections describing the Environmental Research and Technology Air Quality Monitoring Program (starting at Sec. 2.581) should clearly state near the beginning of the discussion what time period was monitored. This period is only indirectly alluded to for particulates in paragraph 2.585. We are left to assume SO_X and NO_X were monitored during the same time span.

EPA-82 2-735 - The concentration for all air pollutants should be expressed in ug/m^3 in paragraph 2.580 as well as Tables 2-3[illegible] and 2-317.

EPA-83 2-742 thru 7-55 - With respect to tables and figures, submitting appropriate labeling is necessary. Units, scales, and choice of proper/consistent system (metric) are desired. Sufficient information needs to be provided on each figure and table to permit its assessment. Where monitoring data are submitted, the period of observations, percent capture of reported data should be included as well as identification of units of measurement and reporting.

EPA-84 For analyses based on monitoring periods of less than a year's duration, justification for the use of such limited data should be presented. It appears that in many cases, the percent capture of monitoring data is less than 75%, particularly for data from the Lynch Road site. Documentation of precisely what model options and input parameters were used (in preference to appended copies of general model descriptions alone) should be described.

EPA-85 2-756 - This section tries to relate all high TSP levels to emissions from Ashtabula Power Plant. Some discussion should be made concerning high TSP levels in the vicinity of the Ashtabula Power Plant and any additional impact that can be attributed to the operation of U.S. Steel, Conneaut.

EPA-86 Page 4-495. During raw material transfer from lake self-unloaders and lake carriers, the material will be delivered to receiving hoppers before being transferred to storage piles. The applicant does not state whether the emissions at the receiving hoppers are controlled.

EPA-87 There is no mention as to whether U.S. Steel or its subsidiaries located at this site will be shipping raw materials by lake carriers to customers. If so, an explanation for the control of loading emissions is necessary.

EPA-88 Page 4-495, paragraph 4.419. The maximum TSP annual fence line concentration from the CDM model is 5.0 ug/m^3. The text states that the additional 5 ug/m^3 from the plant would not cause the secondary (annual) standard of 60 ug/m^3 to be exceeded. Table 2-316 shows a geometric mean for TSP of 53.58 ug/m^3 at monitor number 6, located in Conneaut, Ohio. The total of 58.58 ug/m^3 annual value is too close to the annual secondary NAAQS (Primary, Ohio) to make that statement.

EPA-89 4.508. Paragraph 4.425 indicates that the second highest TSP level was observed on day 127 (May 6) and was 129 ug/m^3. RMAP produced a maximum value of 15 ug/m^3 for that day. Total concentration was then 144 ug/m^3. There is no description of the meteorology for day 127 nor at which monitor the value of 129 ug/m^3 was observed. Since Ohio's primary TSP standard for 24 hours is 150 ug/m^3, the value of 144 ug/m^3 constitutes a situation very close to violation of the Ohio SIP. It should be noted that 1976 24-hour maximum TSPO values for Ashtabula County, Ohio were 244 ug/m^3 at site (2) (violation), 150 ug/m^3 at (4) (violation), and were as high as 135 ug/m^3 at Site 6 and 140 ug/m^3 at Site 7.

EPA-90 4-493 - "The ambient air quality standards would not be violated during the construction phase if proper dust suppression methods are implemented."

The EIS states that wet spraying will reduce dust emissions in the construction area by 50%. Some justification should be made for this percent reduction.

EPA-91 4-494 - The discussion repeatedly (Sections 4.416, 4.419, 4.42[illegible], 4.425, 4.660) intimates that secondary particulate standards are being met at the proposed site. Thus, the monitoring study results described in Volume 2 are ignored. The data showed violations at two sites (1 each) of the 24-secondary standard during the 5 month study period. One of these, the excursion at the Route 20 site, could possibly be explained by the discussion on page 2-756. However, the other excursion cannot be dismissed. The probability of at least one more occurrence of levels greater than 150 ug/m^3, if a full year's measurements had been taken, is very great.

EPA-92 In paragraph 4.423, it is stated that the maximum TSP concentration of 29.99 ug/m^3 for Receptor #4 was due to a six day episode. The RAMF printout confirms this. It should be noted that Page 12 of Appendix D7 states that because of difficulties with light winds, daily concentrations for such periods may be underestimated. Hence, the highest concentrations might be considerable greater.

EPA-93 P. 541 - Has the figure 32 ug/m^3 for the background concentration of particulates been generally accepted by the regulatory agencies? The studies should be referenced and discussed in more detail.

EPA-94 4-515. The EIS states that lake breeze fumigation is not a critical incident in the proposed plant air quality analysis. This conclusion is hard to accept knowing the problems of lake breeze fumigation present in and along the southern portion of Lake Michigan.

EPA-95 Page 2-735, paragraph 2.580. The statement is made that monitoring data indicates that Ashtabula and Erie Counties are attainment areas for both SO_x and NO_x. However, Table 2-316, monitor (4), still shows a max-24 hour value of 1087 ug/m^3. This would imply a violation. These facts should be verified.

EPA-96 Paragraph 4.428 indicates the maximum 24-hour SO_x concentration for the City of Erie occurred on day 163 and was calculated to be 3 ug/m^3. However, there is no mention of the background value for that day.

EPA-97 It is indicated in paragraph 4.429 that the highest SO_x hourly concentration for day 146, hour 20 was 536 ug/m^3. On page 133 in Appendix D8 of the Environmental Assessment, a high SO_x value of 541.36 ug/m^3 for May is shown. This discrepancy should be clarified.

EPA-98 Table 1-67, Page I-351 should show the 24-hour maximum, Class I, sulfur dioxide level at 5 ug/m^3.

4.640 - "Off-site populated areas to the southeast might expect a 2.5 - 5.0 ug/m annual average increase in SO_2 attributable to the plant." This would be within the PSD increment.

Page 4.739, Table 4.318. This Table is not consistent with impact concentrations as given in earlier sections. Example:

	SO_2	Table 4.318	Section
	Background		
EPA-99	24 hour-max	80-110 ug/m^3	4.428 = 106 ug/m^3
	Annual mean	29-45 ug/m^3	4.420 = 27 ug/m^3
	Worst case	80 ug/m^3	4.428 = 83 ug/m^3

It is recommended that NO_x isopleths be shown in a similar manner as the annual inputs of SO_2 and TSP.

EPA-100 4-506. Based on monitor data at the proposed site, the annual SO_2 background value of 27 ug/m^3 is proposed. Since the ERT study on site was for a period of 5 summer months, how was 27 ug/m^3 calculated from the 5 months data? Generally SO_2 levels would be expected to be higher in the winter.

EPA-101 4-524. In paragraph 4.440 it is stated that the "monitoring of NO_x levels at the two sites indicates an average concentration of 20 ug/m^3. As explained previously in this section this represents a worst case situation." No evidence of an earlier reference of this value or what determines the worst case situation has been found.

EPA-102 4.757 - Synergistic effects of SO_x and NO_x with ozone could cause damage to sensitive agricultural crops, nursery stock and native vegetation. U.S. Steel should be required to initiate studies regarding these effects.

EPA-103 4-211 - Effect of SO_2 acid rainwater on Raccoon County Park. The applicant should initiate a study of the affects of acid rainwater on surrounding forest and agricultural lands.

EPA-104 The H_2S emission control during blast-furnace slag granulation is a closed loop system. Since the water used to granulate slag and water used to condense H_2S laden steam will be reused, the possibility exists for build-up of H_2S contaminant in the water, causing heavier H_2S emission than outlined in the statement. This needs clarification since H_2S is hazardous and when added to the other H_2S & SO_2 emissions from coke batteries and other sources in the proposed plant, it may have a detrimental effect on sensitive crops such as grapes and other vegetation.

EPA-105 2-741 - Section 2.584 refers to a three month monitoring period for CO and a two month period for nonmethane hydrocarbons. The months the monitoring was carried out should be listed in the impact statement. A three month period is too short to determine baseline ambient air quality. Standards are defined on the basis of a full year of data and seasonal variations cannot be evaluated during a few months.

EPA-106 Paragraph 4.441 does not give the amounts of CO background for the area. The predicted values are presented but this is not enough to evaluate the impact.

EPA-107 In paragraph 4.434 it is stated that NMHC concentrations average about 0.05 ppm. However, table 2.320 shows an arithmatic average of 0.02755 ppm and a geometric average of 0.10502 ppm. These two values may be in error and should be verified.

EPA-108 In the same paragraph it is indicated that the NMHC data was obtained from one ambient NMHC monitor. This provides a very sparse data source to draw conclusions. Values of NMHC from the monitor could be in error because the equipment is subject to relative error (high level of error - particularly at the levels of NMHC cited). Where assumptions are implied, they should be stated and justified. Assumptions embracing the following subjects need detailed explanation: disregard of building downwash, application of lake breeze, selection of modeling receptors, selection of monitoring sites, choice of meteorological data, choice of critical periods and data, choice/calculation of background concentration and points of maximum impact.

EPA-109 2-724 - In paragraph 2.568, line 10 should read. The higher the plume rises, the lower the ground level concentrations.

2-728 - 1. Page 2-728 - Equation (1) seems to be written incorrectly. It should be

EPA-110 $$\chi(x,y,z;H)=\frac{Q}{2\pi\sigma_y\sigma_z u}\exp\left[-\frac{1}{2}\left(\frac{y}{\sigma_y}\right)^2\right]\left\{\exp\left[-\frac{1}{2}\left(\frac{z-H}{\sigma_z}\right)^2\right]+\exp\left[-\frac{1}{2}\left(\frac{z+H}{\sigma_z}\right)^2\right]\right\}$$

EPA-111 2-734 - Reference to the AQSTM model should be explained.

EPA-112 5.102 - It should be noted that the sulfate increment added by the plant plus the existing high ambient levels will cause both the worst case and the annual mean concentrations to correspond to levels reportedly associated with adverse health effects.

EPA-113 4-531. The hypothetical worst case condition for sulfate conversion should indicate a wind speed of 2.5 meters per second to be properly evaluated.

Water Quality - Lake Erie

On pages 2-788 to 2-802 a brief description is given of the many water quality standards or objectives which have been adopted or proposed for Lake Erie. However, it is never determined which of these conflicting standards should be used as a basis for water pollution control requirements. We believe the following should be addressed in the final study.

a. The Lake Erie boundary line where the Pennsylvania and Ohio standards apply must be identified relative to the outfall location.

b. Only those proposed standards which, as a result of a status check with EPA and the State Agencies, appear likely to be adopted should be used.

c. Varying criteria should be mentioned, but in determining compliance only the most stringent criteria (EPA, LJC (International Joint Commission or State) for each parameter must be used in assessing the impacts of Lake Erie discharges.

EPA-114

d. Other general water quality objectives of the States or the LJC should be used as a basis for the environmental assessment. For example, a general water quality objective of the LJC cited on page 2-801 states that the water of the Great Lakes should be "Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae." In order to ensure that the objective is met, the EIS should assess the nutrient inputs relative to the project.

The modeling work relative to the Lake Erie discharge is a very important aspect of the water quality analysis. Unfortunately, some inadequacies of the model have been identified in the draft EIS:

EPA-115

a. The LAKEPLUME model, which is used to describe subsurface diffusions, has only been verified against surface dye releases (p. C-14).

b. The LAKEPLUME model overestimated by three times the lateral dispersion of the surface released dye (p. C-14).

c. The vertical dispersion component cannot be well defined using existing data (p. C-14).

EPA-116

Furthermore, the existing model has predicted violations in Lake Erie of the proposed Ohio standards for phenols under typical conditions. The violations include even more parameters under the "worst case" conditions.

In summation, we can conclude that:

a. Some violations of water quality standards in Lake Erie as a result of the plant discharge are a real possibility.

b. The duration and severity of these violations is, as yet, uncertain when one considers the model inadequacies, as cited above.

It is EPA's opinion that the Environmental Impact Statement should not only address the outputs of the model but should also reflect the confidence the reviewer can place on the outputs. Because of this, additional information is required in the EIS.

a. A detailed documentation of all input variables to the model as well as a listing and description of the data used to quantify these variables is necessary. Any calibration or verification results and interpretation of those results is also needed.

EPA-117

b. A thorough sensitivity analysis must be conducted on the major input variables. The output of such analysis should also be presented and an interpretation of the results. A discussion of the criteria used in determining the range for each of the input variables in the analysis is also required.

EPA-118 In light of the above facts, it may be more appropriate to report the Lake Erie conditions resulting from the project impact in terms of a range rather than a single figure.

EPA-119 The equation reported for the Froude number (p C-12) is the square root of the equation used in the Plume model. Is this a typographical error?

EPA-120 P.C-18. It is stated in this section that the plume spreads at the surface preserving the same temperature and area. EPA agrees with the statement concerning the temperature but believes that the area is increased due to compression of the depth of flow. This may influence behavior in the Lake Plume calculations.

EPA-121 P.C-18. The statement relates that it is assumed for input that the Plume convectively mixes through a column of water with a width that is the diameter of a circle with area A_E. It also relates that this is consistent with the assumption of Plume and provides a slight additional dilution. EPA is not certain about this consistency. Why is this method used to compute A_E? What is a "slight additional dilution"?

Treatment Requirements

Main Process Water Discharge

The discharge as now envisioned, will violate Water Quality Standards (WQS) in Lake Erie during "worst" case situations, for Phenols, Total Dissolved Solids and Ammonia. There may also be violations of EPA recommended WQS's for two priority pollutants; chlorophenols and polynuclear aromatic hydrocarbons. Existing water quality conditions in Lake Erie do not leave room for liberal interpretation and allowances, especially when a new facility is involved.

Storm Water Treatment

Q-BOP Waste Disposal Area

EPA-122 The runoff from this area will contain among other parameters; Iron, Oil and Grease (O&G), and trace metals. The proposed level of treatment (impoundment) may treat solids to acceptable levels, but will not control the other pollutants present. Additional treatment must be considered. A possible treatment scheme could consist of polyelectrolyte addition with settling and oil skimming.

Oil Storage Level

EPA-123 Treatment by settling is forecast for the discharge from this area. Because of the potential for a large amount of oil to be present in this discharge, some type of oil treatment will have to be provided. Possible alternatives to accomplish this could be oil troughs, skimmers or API separators. In any event, oil treatment should be required. The EIS should describe the oil spill prevention plan to be utilized at the facility.

Roofed Area Runoff

EPA-124 No treatment is proposed for the runoff from the roofed areas even though pollutants in significant amounts (TSS up to 600 mg/l) are present. The adverse effect of this discharge is expected to be mitigated by combining it with the total plant wastewater discharge. All this will accomplish, however, is a dilution of a problem waste stream by a large volume of water.

We recommend that treatment be provided for roof area runoff, with primary settling for solids at the very minimum. If the other chemical compounds present (sulfur, phenols, cyanide and ammonia) are found to exist at high levels then treatment should also be provided for these pollutants.

Solid Waste and Slag Disposal Area

The discharge from this area can be expected to have the greatest pollution potential of all the storage and runoff areas. As evidenced by many studies (references will be provided if needed), the levels of organic material and heavy metals from an area such as the one proposed at Conneaut is very excessive. Some of the ranges that can be expected for the most significant parameters are listed below:

EPA-125

Parameter	Range of Values (mg/l)
COD	81-33,360
BOD	256-28,000
TSS	10-7,000
NH_3-N	0-1,106
Fe	0-2,820
Pd	.10-2.0
pH	3.7-8.7

USSC has stated that they intend to meet the New Source requirements for TSS and pH for this discharge. This will not be enough.

EPA-126 Because this will be a solid waste disposal area, the discharge from this site will be considered to be an industrial point source discharge and as such, will be regulated for certain significant pollutants. Therefore, additional treatment will be required to meet these future requirements. Because of this, treatment alternatives should be identified. Two alternative treatment methods are described below:

EPA-127 1. A biological treatment system to treat the organic constituents followed by a chemical precipitation step to remove the concentrations of iron and other metals present.

EPA-128 2. A settling pond with pump to recirculate leachate back to the disposal area. This has been demonstrated to be an effective way to eliminate the discharge and stabilize the waste disposal site.

Coal Storage Piles

EPA-129 It should be emphasized that the treatment (neutralization and precipitation) of the runoff from the coal must be sufficient to minimize the discharge of metals. The proposal also indicates that the waste sludge from the coke plant and sanitary wastes biological treatment systems will be disposed onto the coal piles. This will further aggravate the runoff and drainage from this area.

EPA-130 Metals and some of the more refractory organic compounds tend to be absorbed and concentrated in the sludge from biological treatment systems. These substances along with arsenic and other compounds, have appeared in significant concentrations in raw coke plant waste waters. Hence, the sludge from the coke plant biological treatment system is anticipated to be highly contaminated with these substances. The disposal of this sludge should be carefully considered. Should this sludge be disposed onto the coal piles, the runoff and drainage from this area will, in all likelihood, require treatment more sophisticated than simple settling and pH adjustment.

General

EPA-131 As a general comment on the disposal of refuse, sludge and "fine grain" wastes, it should be noted that these wastes may be chemically fixed prior to disposal. This would certainly minimize the pollution potential of runoff from the disposal sites.

EPA-132 P. 4-838, last line - Detection limit for chlorine should be 0.02 - 0.03 mg/l.

EPA-133 P. 4-839, under Section 4.743 (Chemical Additives) - More information is needed about the dispersants, corrosion inhibitors and biocides. Biocides may mean more chlorine and a reevaluation of impact would be necessary.

Indirect Cooling Waters

EPA-134 In this discussion in Chapter I (pp. 211-235) it is continually stated that there will be no chemical addition to indirect cooling water, therefore no treatment is required. However, in other sections of the report, we note that chemicals will be added to the cooling system to control corrosion and biological growth. Therefore the blowdown from the indirect cooling systems may require treatment prior to discharge.

Coal Preheating

EPA-135 In paragraph I-298, no mention is made of the disposition of the discharge from the wet ESP's. This discharge will definitely require treatment.

Water Use

On page 4-598, it is mentioned that the water use at the USSC Fairfield Works is about 2860 gallons/ton while that expected at the Lakefront Plant is 3430 gallons/ton (20% higher).

EPA-136 No explanation is given why Fairfield has a better water use rate. Should not Conneaut, with the most modern systems available, be expected to discharge less wastewater per ton of steel produced, especially when significant impacts are expected as a result of the discharge? Are there any major differences (product lines) that account for the higher consumption of water? Conservation of water at Conneaut could result in a lower pollutant discharge rate.

Alternative to Proposed Actions

1. Electric Furnaces

EPA-137 On page 6-8, an alternative which would use electric furnaces to produce molten steel is considered. This alternative would eliminate the need for coke and sinter plants, blast furnace and other miscellaneous areas. The discharge of cyanides, phenols, and ammonia into Lake Erie would be eliminated. This is a definite environmental benefit and it is believed this alternative should be re-analyzed taking into consideration the environmental assets of this approach.

2. Terminal Treatment Lagoon

EPA-138 The installation of a terminal treatment lagoon is laudable and should be instituted if the plant is built. The lagoon will act as a polishing lagoon, possibly removing additional pollutants and lowering the temperature of the effluent prior to discharge. The lagoon will also equalize the characteristic of the effluent, thereby reducing shock amounts of pollutants entering Lake Erie and will guard against spills entering the Lake.

3. Recycle of Treated Effluent Back to Main Processes

EPA-139 An analysis of Table I-26 shows that in most cases, the quality of the water discharge is comparable to the quality of the lake water. What this illustrates, is the potential of recycling a large percentage, if not all, of the discharge water back to the main processes. The feasibility of this approach should be addressed by USSC.

4. Cascading Water Use

EPA-140 An apparent alternative that has not been discussed is the cascading use of each of the discharges. Such a practice is employed at the Kaiser Steel Corporation, Fontana Works, where the discharge from one operation is reused at another operation with lower water quality requirements. The cascading use, minimizes the total plant discharge.

5. Coke Plant

The Draft EIS fails to note the full scale activated carbon treatment system for coke plant wastes installed at the Republic Steel-Cleveland Works in mid-1976 and operated since mid-1977. Reference is made to our letter of April 14, 1978, to Mr. Curtis of U.S. Steel, which provides information about the Republic Steel treatment system. A physical-chemical (activated carbon) coke plant treatment system should be considered in the Draft EIS. The

EPA-141 advantages of this type of treatment should include demonstrated removal of priority pollutants associated with coke plant wastes (polynuclear aromatic hydrocarbons).

In addition to the above, a physical-chemical treatment system could be designed to achieve coke plant effluent limitations set forth by EPA which U.S. Steel claims cannot be achieved (ammonia-N). The Republic Steel system has been shown to consistently remove phenolics to less than 0.1 lbs/day, a level if achieved at the proposed Lakefront Plant would assure attainment of Ohio WQS. Violations of phenolics standards are currently projected (p. 4-631-632). With a properly designed ammonia still, and proper biological treatment, the 10 mg/l ammonia-N concentration could be achieved.

EPA-142 We do not believe the full 1.95 flow factor for coke plants would apply here, but this could probably be best resolved as part of the NPDES permitting process, as should other discrepancies in guidelines parameters, i.e., flows for steelmaking, sintering, hot forming, etc.

EPA-143 Water evolved from coal drying (6% to 1% moisture) may contain priority pollutants and should be captured and treated with coke plant wastes. Air emissions from this operation should also be evaluated as hydrocarbons are likely to be discharged.

EPA-144 Caustic may be used as an alternative to the use of lime in the fixed leg of the ammonia stills (which appears to be the method selected by USSC). The use of caustic has been demonstrated to improve operational efficiency and reduce the ammonia to lower levels. If ammonia continues to be a problem and the water quality requirements are violated, the ammonia will have to be further reduced. An alternative is breakpoint chlorination of effluent from the biological treatment plant. This would also entail use of a carbon system to remove the halogenated organic by-products from chlorination. This system would be similar to the treatment system for a blast furnace blowdown.

Solid Waste

EPA-145 Considering public opposition to new landfills is very strong, U.S. Steel might consider using plant refuse and municipal refuse to cofire with coal for the generation of supplementary steam for electricity or other plant operations. About 250 tons of refuse could be disposed of daily if it were cofired with coal to provide approximately 10% of the Btu's required.

EPA-146 It is very important that more detailed hydrogeologic information be obtained for specified disposal areas to assure proper design before disposal begins. Is protection provided for preventing leaching of solid wastes into drainage of the old streambed?

EPA-147 Table 1-32, on page 1-247 - The only milling operation producing wastes requiring ground sealing considerations is the hot strip mill. It is shown that roll grinder metal fines may require ground sealing, yet the roll lathe metal turnings and knife grinder fines in the hot strip mill, and the roll lathe turning and roll grinder fines in the plate mill will not. Especially confusing is the fact that roll grinder fines in the hot strip mill will need ground sealing, yet the roll grinder fines in the plate mill will not. Are the roll grinder fines generated from these two processes different in composition? According to reference sited in the chart (EPA No. 68-01-2604, Volume III, pages 44 and 45), ground sealing is recommended for mill scales destined for land disposal.

EPA-148 The oil sludges, containing metal fines and metal turnings, produced from the "hot" strip mill and the plate mill are similar in composition as claimed in Sections 1-325 and 1-326 of the Draft EIS. Table 1-32 should be amended to show the potential of ground sealing disposal areas which are to receive a variety of mill scales, metal fines and associated oil sludges.

EPA-149 On page 1-249, Table 1-33, the fourth column heading should read "Wet Basis" to be consistent with Table 1-34 and to resolve the inconsistencies of two columns with identical headings containing different data.

EPA-150 On page 4-680, in Section 4.574, the first sentence should elaborate on the method of storing general plant refuse in piles. Conventional landfilling procedures (i.e., compaction and application of cover material) are suggested to minimize adverse environmental effects associated with open dumping of refuse.

Effects of Air Pollution on Water Quality

EPA-151 4-553 - The EIS states that about 1% of the plant emissions would be deposited in the lake annually (fly ash, soot, and iron oxides). An explanation is necessary regarding this low deposition in the lake when the prevailing wind direction is south to southwesterly.

It was noted on Page 1-137 that extensive adherence to BACT/LAER designations was maintained in controlling emissions. In the discussion of air quality impacts on Lake Erie, it was noted on pages 4-535 to 4-540, that estimates were made of dry deposition rates of NO_x, SO_x and suspended particulates. Components of these particulates should be identified, and then as may be indicated, addressed in terms of the need to prevent the entry of any toxics into Lake Erie (or Lake Ontario). Further, the EIS expressed "uncertainties about atmospheric removal and transport processes over water." In view of the sensitivity of Lake Erie to this effect, the EIS should pursue this point further, to attempt to remove the uncertainty. The size and permanence of this facility merits a much clearer impact identification on the Great Lakes.

EPA-152

The content of the 68 T/yr. of particulate deposition on page 4-536 is poorly identified, e.g., heavy metals usually found in coal and iron ore. Mercury, for example, is one candidate. These particulate effects on water quality of Lake Erie should be discussed.

EPA-153

The comment in the last paragraph of Section 4.590 on page 4-694 unfortunately dismisses the effect of those pollutants which are carried out over Lake Erie. Justification for this lack of concern should be presented.

EPA-154

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July 24, 1978

Colonel Daniel D. Ludwig
District Engineer
Department of the Army
Buffalo District Corp of Engineers
1776 Niagara Street
Buffalo, New York 14207

Re: Environmental Impact Statement
U. S. Steel - Conneaut Site

Dear Colonel Ludwig:

We have read the parts of the Environmental Impact Statement that we feel directly concern us, and we have tried to keep abreast of the many comments that have been made on the impact of the proposed U. S. Steel facility. The concerns that we addressed at the preliminary hearings are still with us. One of these concerns was air pollution, and its effect on our nursery stock. Air pollution has been addressed in the E. I. S., at some length. Some of the pollutants, particularly sulfur dioxide (SO_2), appear to be within levels that would continue to enable us to grow evergreens.

Unfortunately, as we learned from our research, there is a pollutant that apparently cannot be brought within acceptable standards - ozone. In fact, if we read the E.I.S. correctly, ambient air quality standards for this pollutant are already being exceeded in our area. The E.I.S. admits that the U.S. Steel facility would compound the problem. There would be some degradation of air quality associated with the primary emissions from the mill itself, and some from the increased vehicular traffic in that area.

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There would, of course, be more people. There would, it follows, be more cars, trucks and busses. There would be emissions of exhaust fumes from these vehicles. Heavy industry and heavy traffic cause a condition well known in some parts of our country. It's called smog. Depending on how many people, how many satellite industries, how many more cars, trucks and busses arrive, we will have more or less smog. We will have ozone, a primary component in smog. Ozone can cause serious injury to plant life, and our business is plants.

There is a great deal of talk in the E.I.S. about monitoring air quality after the mill is built. Stack emissions from the mill can apparently be predicted with some degree of reliability, but the E.I.S. as much as admits that no one can accurately predict what effect the combined primary air pollutants from the plant itself and secondary pollutants from the increased population will have, particularly on agriculture. Monitoring can only tell us what has happened. It won't do Fairview Evergreen Nurseries a bit of good to learn that we had thousands of dollars damage yesterday because of an ozone excess from 3:00 to 5:00 p.m. We feel certain that if the plant is built we will see some increase in air pollution damage to our nursery stock.

FEN-1

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The E.I.S. is not concerned about the effect of the proposed project on our nursery stock. Nobody from the A. D. Little Company contacted us while they were writing the E.I.S. Nobody from our good neighbors, U.S. Steel, came knocking at our door. Whatever they know about us, if anything, they got second hand. (I would like to take this opportunity to thank Col. Ludwig and his staff from the Corp of Engineers who did, upon the invitation of the Agricultural Organizations of Erie County, take the time to visit our nurseries and some of the other prime farmlands in Erie County last summer. They, at least, know we exist.)

But why is the E.I.S. not overly concerned with us, or for that matter any of the agriculture in the fertile West County lake plain area? We think it is because they assume we will sell out, pack up and move on as soon as the right developer approaches us with the right offer. They think that in ten years there won't be any more agriculture in the West County lake plain. Any maybe they are right. Our own county planners give the impression that they think the same thing. Almost all of that prime farmland is zoned industrial, or commercial, or suburban residential. So if all the farmers sell their land, take their money and run, the E.I.S. is right. There won't be any problems with agriculture.

FEN-2

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If U.S. Steel and Penelec's Coho Station and lots of other satellite industries and 30,000 new people come into the area, well, a lot of farmers will get out. So the implied prophesy may be self-fulfilling.

But Fairview Evergreen Nurseries, Inc. is not planning to get out. We have been growing trees in that area for almost as long as U.S. Steel has been thinking about putting a mill there. U.S. Steel claims that they will be a good neighbor. Fairview Evergreen is a good neighbor. Most of our 2500 acres of land is open to hunters and fishermen, bikers and hikers, cross country skiers and snowmobilers. It is open land, recreational land to many of you. We would like to be able to see it remain that way. We think A.D. Little and U.S. Steel would like you to think it would remain that way if the mill were built. It won't. We see large areas of prime agricultural land being lost to development. We see the remaining agricultural land posted, patrolled or fenced to keep people out. We see the U.S. Steel project as the end of one way of life in Erie County, and the beginning of another. Agricultural to Industrial. We think the E.I.S. should more clearly state this. Why it doesn't, is up to you to decide.

Very truly yours,

D. Garth Hetz, President
FAIRVIEW EVERGREEN NURSERIES, INC.

D. Garth Hetz

A-32

United States Department of the Interior

OFFICE OF THE SECRETARY
NORTH CENTRAL REGION
2310 DEMPSTER STREET
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ER 78/472

August 31, 1978

Colonel Daniel D. Ludwig
District Engineer
ATTN: Regulatory Functions Branch
U.S. Army Engineer District,
Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This responds to your letter of May 22, 1978 requesting comments on the draft environmental statement for Permit Application, Lake Front Steel Mill, Ashtabula County, Ohio and Erie County, Pennsylvania.

GENERAL COMMENTS

The document is difficult to review not only because of its size, but also because of its organization. There is a tendency to present data in narrative form rather than (or in addition to) tables or figures. We feel the statement could be shortened through greater use of graphic presentation, and urge also that the final statement include more legible maps.

In the presentation of tables and figures, the conclusions and/or assumptions set forth in the impact statement should be supported by data that is presented within this document and readily available to all reviewers. In an effort to shorten the statement, certain tables or figures have been omitted which were only available to members of the Technical Review Team in several Interim Reports and periodic Summary Reports. The inclusion of some of these tables and figures and additional information in the Final Impact Statement is deemed essential. Particular areas of concern are outlined below in the sections dealing with specific comments.

Despite its bulk, the EIS is not uniformly thorough in its treatment of fish and wildlife. The proposed project's unavoidable impact on terrestrial wildlife is fairly well covered. Lake Erie aquatic life

is not adequately described and the discussion of probable impacts on aquatic life in the lake is unsatisfactory. The discussion of alternate sites for the plant contains no information about the sites' ecology. The discussion of alternate schemes of development on the lake front site is biased in favor of the proposed project and contains conclusions without supporting data.

From the data presented, the proposed steel plant would be a major economic boost for the plant-site area, as well as for those areas of the country that would provide the primary raw materials. The Conneaut Plant will consume coal from mines in Pennsylvania and West Virginia, taconite pellets from mines in Minnesota and Michigan, iron ore from Minnesota, Labrador, and Quebec, Canada, and limestone from Michigan. Of more importance nationally will be the opportunity for U.S. Steel to demonstrate the cleanliness and improved productivity of a modern integrated steel plant.

SPECIFIC COMMENTS

FWS-1 The Table of Contents should include a list of all tables and figures, complete with captions and page citations.

Chapter I. Project Description

FWS-2 The site boundary shown on Figure 1-1 (page 1-12) is difficult to identify, but appears different from that shown on Figures 1-41 (page 1-268), 1-45 (page 1-275) and 1-47 (page 1-278). The discrepancy should be explained or eliminated.

Page 1-15, paragraph 1.27 - The report states that the facility will ultimately produce 6.4 million tons of finished steel. If the raw steel production at the plant is 7.5 million tons, as was noted in the summary, a recovery rate of 85 percent would be necessary. This is similar to yields claimed by the Japanese steel industry. The current United States average is 70 percent.

FWS-3 Page 1-65, paragraph 1.119 states that both iron and slag will be tapped from a single taphole. If so, this is contrary to usual practice; for example, a large blast furnace being built by Inland Steel Company at Indiana Harbor, Indiana, will have two tapholes and one cinder notch (slag taphole).

FWS-4 Page 1-74, paragraph 1.130 - The abbreviation "EOT" is not given in the list of abbreviations (page xxxvi).

FWS-5 Construction of marine receiving facilities as proposed in Conneaut Harbor will have a significant impact on what appears to be a very important spawning and nursery area. Further discussion by the applicant is needed in this section and in Chapter 6, Alternatives, regarding two considerations: (1) justification for a total pier extension of 1,500 feet, and (2) alternative locations and/or configurations for necessary pier requirements.

FWS-6 Anticipated tonnages of raw materials necessary to support the steel plant compared to what is currently being received at the P&C Dock may appear to support the need for the amount of docking space proposed. However, large acreages of upland have been set aside for raw material storage. Thus, it would appear that the proposed pier extensions may only be justifiable based on some undocumented expected frequency of ship arrival and unloading rates. Further discussion and documentation is necessary regarding total number of ships that can reasonably be expected to utilize docking facilities at the same time, frequency of unloading, and the absolute minimum amount of unloading pier requirements.

FWS-7 The proposed pier configuration, aside from the massive amount of required dredging, is expected to cause some water quality problems. Specifically, reduced and/or altered circulation patterns and perhaps increased deposition of silt and other pollutants entering the harbor from Conneaut Creek are anticipated. Other alternatives to pier configuration, location, and length should be discussed in the final EIS. For example, an unloading facility outside the harbor on the lakeward side of the eastern breakwall beginning at the 15 or 20 foot contour would have far less impact on existing aquatic resources. The integrity of the productive shallow water areas within the harbor would be maintained. A second alternative that should be addressed would be the feasibility and/or adequacy of extending required pier space in a straight line from the existing eastern pier. Dredging would be confined to existing deeper areas on the west side of the extension. Maximum utilization of flow-through culverts would be essential.

FWS-8 Figure 1-39 (page 1-262) shows no site boundary but is captioned Available On-Site Solid Waste Disposal Areas. However, areas labeled 1, 2, 3 and 4 in the figure are outside the site boundary as shown on Figures 1-41 (page 1-268), 1-45 (page 1-275) and 1-47 (page 1-278). It would be helpful to have the applicant's property line clearly shown on all figures of the site.

4

FWS-9 Paragraph 1.343 on page 1-263 mentions four criteria used by the applicant to evaluate potential sites for solid waste disposal. Two of the criteria may be of lesser importance insofar as selection of a lined impoundment site is concerned. Type of Waste Material may not be a critical criterion if properly lined impoundments are used for fine-grained waste regardless of their location. Groundwater protection would also hopefully be assured by impoundment lining regardless of impoundment location. The remaining criteria do not lead logically to the conclusion that Area 7 is the best site for lined impoundments. On the contrary, they lead logically to the conclusion that Area 7 is the worst site. Area 7 is closer to Lake Erie than six of the other seven potential sites. Furthermore, it contains a major portion of the Turkey Creek ravine which is probably the most sensitive ecosystem on the property. Area 1 and 2, on the other hand, are the farthest from Lake Erie and contain mostly northern hardwood forest rather than poorly drained, shrub-filled old fields and riparian areas. The latter habitat is essential to woodcock, the migratory terrestrial species of concern to the Fish and Wildlife Service.

FWS-10 Page 1-267, paragraph 1.346 - The chemical, physical, and biological characteristics of Lake Erie bottom sediments to be disturbed during dredging of the intake-structure pipeline trench should be assessed. Such data would be helpful in evaluating adverse effects on water quality of Lake Erie within the project area that may result from resuspension of any toxic substances present.

FWS-11 According to the last sentence of paragraph 1.347 on page 1-273, a rationale for intake location and design is appended to the draft statement. We found no such appendix. However, we noted that Appendix C (dealing with water quality modeling to determine outfall location) cautions against locating intake and discharge at the same depth contour as now proposed by the applicant.

FWS-12 Paragraph 1.349 on page 1-274 mentions an "energy dissipation system" that would be installed at the confluence of Conneaut Creek and the proposed diversion channel. The system would have no effect on bare earth banks of the 16,000-foot long channel where erosion is likely to be a chronic problem.

5

FWS-13 Paragraph 1.354 on page 1-281 states that 1,290 acres of the site would be cleared of vegetation and graded as part of Step I and II construction, and that several hundred more acres would be used for solid waste disposal during the operating life of the plant. The latter statement contradicts items 3(A)(3) and 3(B)(3) of the SUMMARY section. These items state that 1,290 acres of the site would be used for buildings, roads, ponds and waste disposal but that the remaining 1,470 to 1,500 acres would not be altered. This serious discrepancy should be explained or eliminated. The final EIS should include a large-scale detailed figure showing existing topographic features of the site (e.g., tributaries and mainstem of Turkey Creek and roads) and clearly delineating areas to be developed and areas to be left unaltered.

FWS-14 Page 1-282, paragraph 1.356 notes that top soil will be stored on the site until plant construction is completed. Measures such as hydro-seeding should be considered in order to minimize erosion of this material as a result of stormwater runoff (page 1-290, paragraph 1.367).

Chapter II. Environmental Setting Without the Project

FWS-15 The legend for Figure 2-54 (page 2-621) fails to distinguish between important mammal habitat and important game bird habitat. Both areas, according to the legend, are white, but no such white areas are evident on the figure itself.

FWS-16 Page 2-935, paragraph 2.704 - This paragraph seems to imply that undisturbed open areas of comparable quality to that which exists on the proposed site exist throughout Ashtabula County. It states that, "These areas are particularly important when used as farm game cooperatives, where farmland is managed for simultaneous use as game and wildlife habitat." In order for the reader to assess the values of such areas to perhaps support or ameliorate losses in production that will occur at the project site, a list of those "open areas" and acreages that are intensively managed for game and other forms of wildlife, and which exhibit a comparable degree of diversity of habitat should be provided.

FWS-17 The description of Ashtabula County forest on page 2-936, paragraph 2.702, mentions big shell bark oak. We are unfamiliar with this common name and doubt that such a tree species exists (perhaps it is shellbark hickory).

FWS-18 In a discussion of wetland areas within Ashtabula County, paragraph 2.706, page 2-938, the reader's attention is called to Figure 2-66, page 2-652. This particular figure does not depict the distribution of bogs, marshes, and swamps in that portion of the Principal Study Area. An accurate map should be displayed.

FWS-19 The word "sufficient" in the first sentence of paragraph 2.717, page 2-942 should be either omitted or the meaning more fully explained. Again there is an implication that other habitats within the county will sustain the loss of wildlife production that will occur on the project site in addition to their current production levels. This is usually not the case since these other areas are most likely to be at or very near maximum carrying capacity. The lake front site is unusual to Ohio in many aspects. Current population and production levels of woodcock, a migratory bird, have prompted wildlife biologists from both Ohio and Pennsylvania to express the opinion that the lake front site sustains the best woodcock populations of any known site within the boundaries of either the State of Ohio or the Commonwealth of Pennsylvania. It is highly unlikely that other available habitats will be able to sustain the loss of these birds.

FWS-20 Also, in paragraph 2.717, page 2-942, which deals with wildlife of Ashtabula County, there should be some attempt to provide additional data relative to the information provided in Tables 2-387, and 2-388 (page 2-943 through 2-945) in order to enable reviewers to compare the lake front site with the county and the state as a whole.

FWS-21 In the discussion of a "Summary of Unique Biotic Features", page 2-946, the Turkey Creek Watershed should also be listed as one of those sites exhibiting "high quality habitat in terms of available food and cover".

FWS-22 The game bird mentioned in paragraph 2.738 should be ruffed grouse, not ruffled grouse.

FWS-23 Paragraph 2.743 on page 2-961 states that certain species lists and lengthy tables have not been included in an effort to conserve space. In opening comments we have indicated the reason why we cannot agree to the omission of certain figures, charts, or lists which have been readily available to members of the technical review team. Inclusion of the following figures and/or tables relative to the discussion of existing biotic communities on

the proposed lake front plant site is deemed essential in order to effect an adequate final impact statement: (Figures and tables from Volume II of the Second Interim Report - Terrestrial, December 1977):

(1) Table IV-1, page IV-34, a "Checklist of Plant Species Collected at the Proposed U.S. Steel Lake Front Site, Conneaut, Ohio"

(2) Table IV-4, page IV-72, "Plant Species Reported for Erie County, Pennsylvania, or Ashtabula County, Ohio, Which are Found on the Preliminary List of Rare and Endangered Species List for Ohio"

(3) Table IV-5, page IV-78, "Plant Species Reported to be Rare in Western Pennsylvania (after Buker, 1975)"

FWS-24 The legend for Figure 2-138 (page 2-965) fails to distinguish between wetland tree communities and standing water. Both areas, according to the legend are black.

FWS-25 Alder is a prominent and ecologically important shrub throughout much of the riparian area along Turkey Creek and in the poorly drained old fields. It should be included in Tables 2-395 (page 2-967) and 4-321 (page 4-747).

FWS-26 Study Area 9, according to paragraph 2.752 on page 2-972, is covered with bushy shrubs, but Figure 2-136 (page 2-964) shows a different vegetation type, i.e., tall slender shrubs. This should be corrected.

FWS-27 Discussion of avifauna activities on the lake front site in paragraph 2.773, page 2-981 is quite brief. Although avian activities in relation to various ecotones were discussed earlier in this section, there is no mention of the importance of this site to migratory bird activities. For example, on page VII-2 and VII-13 of the Second Interim Report, December 1977, three important statements referring to migration are made. Their inclusion in the FEIS will strengthen this section. A discussion of study areas 4 and 5 on page VII-2, states that, "The Lake Erie shoreline is a major flight-path for birds in this locality". Further, on page VII-13, in a discussion of general migratory patterns, the applicant's consultant has stated that, "In view of the Great Lakes as an obstacle to migrating birds, the location of the

study site on the south shore of Lake Erie is significant. For years, this area has been well known as a place to make observations of migratory birds". Paragraph 2, page VII-15 of the Second Interim Report also provides some additional insight regarding the attractiveness of the general area to migratory raptors stating that, "Several rare or unusual raptors have been seen in the vicinity by bird banders and falconers. Bald eagles and gyrfalcons have been noted in the Lake City, Pennsylvania area." Lake City is only a few miles to the east of the proposed site. Eagles were observed in 1971, 1973, and 1974. Two gyrfalcons, regarded as accidental species, were observed in the spring of 1977.

FWS-28 The FEIS should include a brief description of the ichthyoplankton sampling gear and should mention the duration of plankton tows. Presentation of ichthyoplankton sampling results is very confusing. For example:

FWS-29 (1) Paragraph 2.843 states that no ichthyoplankton were collected at Station LE4, but Table 2-422 shows eggs or larvae were collected there on five different dates in June and early July 1977.

FWS-30 (2) Paragraph 2.843 states the largest collection occurred at nearshore Station LE10, but paragraph 2.844 states the largest nearshore collections generally occurred at Stations LE2 or LE4. Furthermore, the latter statement is contradicted by data in Table 2-423 which show LE2 and LE4 collections during June and early July 1977 were lower than collections at LE1, LE5 or LE10.

FWS-31 (3) Table 2-423 contains data for nearshore Stations LE9, LE12, LE13 and LE15, but no such stations are shown on Figure 2-148 (page 2-1050).

FWS-32 (4) Data for nearshore Stations LE9 and LE10 appear in two different positions in Table 2-423.

FWS-33 (5) Table 2-422 contains no data whatsoever for 6 of 15 offshore Stations, namely LE7, LE8, LE9, LE10, LE12 and LE13.

FWS-34 (6) Data for nearshore stations are summarized in not one but three separate tables (2-423, 2-424A and 2-424B). Surface/bottom comparisons are given for some but not all stations and sampling dates. Day/night comparisons are given for some but not all sampling dates.

FWS-35 (7) Table 2-426 purports to show concentration (densities) of fish larvae in surface and bottom water at 15 offshore stations on several dates between mid-July and mid-August 1977. It is unclear whether each tabulated value represents results from a single collection or the lowest, highest or mean of more than one collection taken over a 1 - 12 day period. Therefore, it is impossible to use these data for comparisons between surface and bottom or among stations or dates.

FWS-36 Tables 2-422 to 2-427 give densities or numbers of ichthyoplankton and Tables 2-428A and 2-428B give species checklists. This information should be reorganized to show densities for each species (or higher taxa in the case of Cyprinidae or Catostomidae) at each sampling station on each sampling date. Without this information, a reader cannot determine what the entrainment impacts on ichthyoplankton are likely to be at the proposed intake location (LE9) or whether entrainment impacts would be less severe at some location other than the one now proposed.

FWS-37 The FEIS (paragraph 2.853) should mention the mesh size and dimensions of gill nets and seines used to collect adult and juvenile fishes. The time and duration of gill net and seine collections should be tabulated to show the size, range and number of individuals for each species at each sampling station on each sampling date. This information is prerequisite to final selection of intake and discharge sites where adverse impacts to fishes would be minimized. In this connection, it is somewhat alarming to note (see paragraph 2.854, page 2-1164) "the greatest total catch per unit effort occurred at LE9, averaging 54.9 individuals per gill net set". Station LE9 is the proposed intake site.

FWS-38 Adult fishes should be identified according to species, not merely genus or family. In lists or tables, it is conventional to group species by family and to order the families according to American Fisheries Society Special Publication No. 6. This has not been done in Tables 2-429, 2-430A, 2-430B, 2-440 to 2-447, all of which should be revised.

FWS-39 Gill net results for September and October 1977 are available, according to pages 4-792 and 4-793. Why are they not included in Table 2-429?

FWS-40 Tables 2-432, 2-433, 2-436 and 2-437 deal with "average" numbers of benthic macroinvertebrates in Turkey Creek and Raccoon Creek. The FEIS should clarify how these averages were derived. It might be more informative to list the range of values as well as an average.

FWS-41 Paragraph 2.888 on page 2-1188 mentions Table 2.432a, relating to Turkey Creek benthos. We found no such table in the EIS.

FWS-42 According to paragraph 2.905, Turkey Creek was sampled for adult fish from April through October 1977. Tables 2-442 to 2-446 contain sampling data for April through August 11, 1977. They should be revised to include data for September and October 1977 when salmonids normally approach and enter Lake Erie tributaries.

FWS-43 The first sentence of paragraph 2.909, page 1214, and the next to last sentence in this same paragraph are somewhat contradictory. Electrofishing surveys that were performed by Fish and Wildlife Service personnel during the spring of 1977 indicated that centrarchid populations below State Line Road were not restricted to that portion of Turkey Creek designated as Station TC1. Between the mouth of Turkey Creek and that point on the creek crossed by the B&LE railroad tracks there are several excellent pools with snags of fallen trees that provide attractive cover. Numerous centrarchids 8 to 10 inches in length were taken from these pools.

FWS-44 Paragraph 2.913, page 1215, in a discussion of the occurrence of rainbow trout in Turkey Creek indicates that, "The presence of such large individuals in a small, headwater stream was unusual". The Fish and Wildlife Service does not believe that the presence of adult rainbows in a stream having very good water quality, acceptable water temperatures, and a good dispersion of required habitat parameters can be considered unusual. Several adult individuals, 18 to 20 inches in length, were taken in electrofishing surveys during the spring of 1977 between the B&LE tracks and State Line Road. Adult rainbows were also taken in the vicinity of TC4 next to Rudd Road. This small section of Turkey Creek, perhaps 100 yards, was thought to have been channelized at one time, although this is unsubstantiated. The reader should not be led to believe that use of Turkey Creek by adult salmonids is an unusual occurrence. Also of importance and significance is the fact that salmonids were observed by the applicant's consultant in late December 1977 or early January 1978 to be engaged in redd making activities in the vicinity of station TCT-2. During subsequent investigations in May 1978 regarding the viability and/or success of three or four redds, several rainbow fry were eventually recovered and positively identified. These facts and other pertinent fisheries data that are to appear in a final Interim Report by the applicant must be discussed in the FEIS regarding their relevance to the evaluation of Turkey Creek.

FWS-45 Paragraph 2.940 incorrectly states that the blue pike is listed as threatened by the federal government. In fact, in the October 27, 1976 publication of the Federal Register, the U. S. Fish and Wildlife Service lists the blue pike as endangered, not merely threatened.

FWS-46 Chapter IV. Environmental Impact of the Proposed Action

A projected rise in water temperatures of only 1-2°C is predicted in the 16,000 foot diversion channel of Turkey Creek as described in paragraph 4.494, page 4-584. In an unshaded channel of this length and flow, a rise in water temperatures of between 10 and 15°F could reasonably be anticipated. The FEIS should provide rationalization for such a low prediction.

FWS-47 Also the same paragraph on page 4-585 indicates that a long-term problem of scouring action would be prevalent for several years as would elevated water temperatures because of the time required to establish natural (shading) vegetation. Correction of this problem would require complete riprapping of the entire 16,000 feet of channel and the relocation of existing trees and shrubs in sufficient quantities to maintain water temperatures at a level that would not adversely impact Conneaut Creek. Vegetation would have to be well established prior to the use of such a diversion canal.

FWS-48 Paragraph 4.619 mentions a 1,290-acre construction zone, but according to paragraph 4.623, the construction zone would occupy 800 acres. This additional discrepancy regarding acreage to be developed should be explained or eliminated.

FWS-49 Paragraph 4.624 mentions two red maple trees that are larger than Pennsylvania's existing record red maple. Some provision should be made to preserve these specimens if the plant is constructed.

FWS-50 Regardless of whether or not shallow areas which may exist in the western portions of Conneaut Harbor (as discussed in paragraph 4.683, page 4-775) would also support spawning, nursery, and feeding activities by similar fish populations, the loss of one-third of this habitat is unacceptable. Alternatives mentioned earlier in our comments must be formulated and thoroughly evaluated.

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FWS-51 In paragraph 2.481, page 2-620; paragraph 2.889, page 1188; paragraph 2.917, page 1218; and in paragraph 4.692, page 4.781 near the bottom, reference is made to "...recent clearing and grading operations" that apparently decimated benthic invertebrates in a Turkey Creek tributary east of State Line Road and north of the Penn Central tracks. The EIS fails to mention that several hundred feet of the tributary were put in a pipe culvert and covered with fill. This stream channelization and its effects should be described in greater detail.

FWS-52 The Corps staff's effort to estimate ichthyoplankton entrainment loss (pages 4-788 to 4-792) is commendable. However, the data on which the estimates are based should appear in the EIS. The analysis is not possible from information (Tables 2-422 to 2-428) now in the draft EIS. Without these data, the reader cannot check the Corps' analysis and cannot compare the proposed intake location (LE9) with other possible intake sites.

FWS-53 Based on the Fish and Wildlife Service's review of raw data not available in this EIS but provided in the Interim Reports by the applicant's consultant, it would appear that ichthyoplankton is present in sufficient quantities to raise serious concerns about possible entrainment losses at the proposed location of the intake. However, another potential problem which should be addressed in the FEIS in paragraph 4.697, Impact of the Water Intake, is of artificial concentration of fish populations. A review of the intake design features indicates that the size and quantity of riprap materials to be used in its construction will likely attract fish populations (both adult and larval forms) to this "protective cover" in greatly increased concentrations. The intake structure will involve approximately 3/4 of an acre of the lake's bottom, and the cluster of twelve intake heads will be surrounded with 500 cubic yards of rock riprap and concrete block (Paragraph 1.346, page 271). Such a structure will attract juvenile and adult fish, especially in an area where the catch per unit effort already indicates high fish populations.

FWS-54 The analysis of impingement data (pages 4-792 to 4-794) is unsatisfactory. The discussion does not mention mesh size and dimensions of gill nets, duration of gill net sets, the number of sets at each location, and the size of fishes collected. Therefore, it is impossible for the reader to determine catch per unit effort and, on that basis, to predict at which sampling location impingement would be least serious.

13

FWS-55 Paragraph 4.772 is misleading in several respects:

(a) Black bullhead cannot be considered common in the area. Only six were collected in Conneaut Creek and only one was collected in Turkey Creek, according to Tables 2-430A, 2-440, 2-442 to 2-447.

(b) Not one but four specimens of American brook lamprey were collected in Raccoon Creek, according to Table 2-441.

(c) Sea lamprey is listed as Indeterminate by the Commonwealth of Pennsylvania. The species is not mentioned in this paragraph although Table 2-440 shows one specimen was caught in Raccoon Creek during July and one during August 1977.

Chapter V. Any Probable Environmental Effects Which Cannot Be Avoided

FWS-56 The narrative regarding impacts on Recreation, paragraph 5.13, page 5-5, is not complete. It should also provide the reviewer with an analysis of the following recreational needs in northern Ohio: easy, cost-free access to the Lake Erie shoreline, industry-free river mouths, and harbor structures available for use by sport fishermen and other recreationists. The construction of this steel making complex as proposed will unduly curtail future recreational opportunity, and mitigation measures should be required.

FWS-57 The last sentence of paragraph 5.13, on page 5-6 which discusses mitigative measures is not in sufficient detail to allow the reviewer to judge the feasibility or practicality of those proposals. The FEIS should be sufficiently detailed as to how loss of fishing areas will be accomplished, how and where new fishing and hunting areas could be provided, and what specifically is meant by "...the alleviation of hazards to small boats".

FWS-58 The discussion of mitigation and compensation measures is also hypothetical. Phrases such as "could be lessened", "could be achieved", "could be acquired", "could be seeded", "could be replanted", "could be added", "could be taken", "could include", appear on pages 5-35 to 5-47. There is no explanation of who would be responsible for implementing the measures mentioned. Indeed, there is no assurance that they would be implemented at all.

FWS-59 Discussion of measures to mitigate damage to the site's wildlife is not sufficiently detailed. The final EIS should specify the location and acreage of "undisturbed woodcock habitat" and spotted turtle habitat "of similar quality and carrying capacity" (paragraph 5.93), of "land containing standing water and tall shrubs", and of "other tracts" for wildlife management (paragraph 5.94).

FWS-60 Paragraphs 5.92 and 5.93, page 5-34, inadequately describe the impacts on resident woodcock populations. It appears to indicate that the "overall effect" will simply be the loss of one full year class. Actually there will be a permanent loss of 90 percent of a major nesting area and most likely a 100 percent loss of all existing habitat within 10 years of plant operation. Impacts cannot be simply described as affecting one year class. Production capabilities will be eliminated entirely from this site forever. Secondary growth impacts on remaining suitable habitat in the area, which there has been no attempt to quantify, will probably be equally devastating over the long term.

FWS-61 Construction of the diversion channel would obliterate about 16 acres of vegetation [illegible] 3 acres as stated in paragraph 5.97 (page 5-36).

FWS-62 Alteration of depths and suitable substrate within the harbor will also cause major impacts associated with required dredging activities along with potential water quality problems as discussed in paragraph 5.115, page 5-44.

Chapter VI. Alternatives to the Proposed Action

The discussion of alternative plant layout (paragraphs 6.7 and 6.8) deals only with displacement of the entire steelmaking complex about one-half mile east. It should mention the rearrangement of facilities (relative to each other) that are now proposed for the Turkey Creek ravine. For example (refer to Figure 1-4 on page 1-21):

FWS-63
(1) Oil storage could be relocated 150 meters west

(2) Sinter plant could be relocated 200 meters east

(3) Lime plant could be relocated 200 meters east

(4) Powerhouse could be relocated 100 meters east

(5) Coal blending could be relocated 150 meters west and parallel to coal storage area rather than parallel to W1200 grid line

(6) Coke ovens could be oriented in the east-west axis and centered at W0950, S1250

(7) Coke oven gas cleaning could be centered at W1100, S1000.

With this arrangement of facilities, a "greenbelt" could be maintained along Turkey Creek up to the 630-foot and 640-foot contours, as was suggested in the April 21, 1977 letter to the applicant from the Corps of Engineers, Buffalo District.

FWS-64 Paragraph 6.17, page 6-12 - Available information is totally inadequate to assess the viability of the Texas site. Major potential environmental problems that could be associated with development of this site should be outlined in the greatest detail.

FWS-65 According to paragraph 6.18, proposed lake front plant facilities would require development of about 1,800 acres. This estimate is nearly 50 percent higher than the figure (1,290 acres) appearing elsewhere in the EIS. The discrepancy should be explained or eliminated.

FWS-66 Discussion of alternate intake locations (paragraph 6.84) is brief. The basis for discussion is unsatisfactory because the presentation and analysis of data in Chapters 2 and 4 are confusing and incomplete. Attention has been called to specific deficiencies in previous comments.

FWS-67 According to paragraph 6.106, the applicant "finds that the costs generally outweigh the questionable benefits" of relocating Turkey Creek east of Rudd Road. What are the costs? How were costs estimated if, as noted in paragraph 6.91, the applicant developed no detailed design specifications?

FWS-68 We question whether the culverting and fill in Turkey Creek would be required to accommodate bridge or conveyor belt systems, as stated in paragraph 6.109. Certainly such structures could be erected without encroaching on the existing channel. Furthermore, conveyors could be partially or completely covered to prevent dust and spillage at crossing points.

Paragraph 6.110 mentions shrublands, forests and wetlands in the eastern portion of the plant site that may be cleared for solid waste disposal, if such disposal is not allowed in the Turkey Creek ravine. These tracts should be identified and described
FWS-69 in greater detail so determination can be made on which scheme involves the more serious environmental impacts.

We recognize the applicant's desire to restrict access to a huge manufacturing complex such as the proposed lake front plant. However, it is not clear from paragraph 6.111 why a fence could not be erected south of Lake Road so as to maintain public access
FWS-70 along Lake Road to the east breakwater and the beach near the mouth of Turkey Creek. This would facilitate uses by fishermen and waterfowl hunters without unreasonably affecting plant operation.

According to paragraph 6.113, the applicant considers changes to plant layout unacceptable because they "...will preclude future plant expansion..." This line of reasoning is inconsistent with
FWS-71 assurances in the SUMMARY (items 3(A)(3) and 3(B)(3)) that although 1,290 acres would be developed, the remaining 1,500 acres of the site would not be altered.

Paragraph 6.113 also mentions increased project costs for bridges and conveyance systems. If these costs are to be determining factors in selecting alternatives, they should be included in
FWS-72 the FEIS and compared with costs of totally filling and grading the Turkey Creek ravine.

SUMMARY COMMENTS

After a thorough review of all available field data, it appears that most of the concerns which were expressed in the Fish and Wildlife Service's initial coordination letter of April 21, 1977 have been confirmed. In that letter, the Service stated that many of the project proposals were considered to be environmentally unacceptable and in need of modification.

Although alternatives and various means of mitigating project impacts have been suggested, to date the applicant has not made any specific commitments regarding mitigative or compensatory programs other than to move a proposed discharge offshore.

The Fish and Wildlife Service believes that field data have shown this shoreline site to be particularly unusual to the State of Ohio because of the presence of various flora associations; the presence of at least 22 plant species in the Turkey Creek watershed

which are considered to be rare in Ohio, two of which are also rare in Pennsylvania; the presence of several large trees which exceed previous records in Ohio and Pennsylvania; the fact that at least two-thirds of the project site can be considered a major woodcock nesting area with heavy use also in the fall; two areas within the site are also utilized for nesting by the Wilson snipe; heavy use of the site in the spring and fall by many forms of migratory birds including hawks, warblers, ducks and shorebirds; the presence of a substantial population of the spotted turtle which is considered to be endangered in Ohio; and the presence of over 40 species of fish in the Turkey Creek watershed which is one of only two streams in Ohio providing a stream mouth salmonid fishery on Lake Erie.

In addition to comments on the adequacy of the environmental impact statement, we also wish to use this opportunity to provide preliminary comments pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). Based on the available information and field reviews, the Department of the Interior has serious reservations about the project as proposed because of its adverse impacts on fish and wildlife resources. Our principle concern
FWS-73 at this time centers around the lack of adequate measures to mitigate and compensate for adverse project impacts. We would be extremely reluctant to concur in the issuance of any permit unless the project includes mutually agreed upon mitigation and compensation measures as part of project cost. These measures should be detailed in the final environmental impact statement.

Because of these concerns, we ask that you conduct further consultation and coordination with the U.S. Fish and Wildlife Service. The designated contact point for this project is the Area Manager, Fish and Wildlife Service, East Lansing Area Office, Manly Miles Building, East Lansing, Michigan 48823, telephone number 517/372-1910 or FTS 374-4206.

Sincerely yours,

David L. Jervis
Regional Environmental Officer

24 JUL 1979

United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
NORTHEAST REGION
PHILADELPHIA, PENNSYLVANIA

IN REPLY REFER TO:
4110
ER-

JUL 1979

Memorandum

To: Regional Director, Fish and Wildlife Service
North Central Region

From: Acting Regional Director, Northeast Region

Subject: Review of draft environmental statement for Permit Application, Lake Front Steel Mill, Ashtabula County, Ohio and Erie County, Pennsylvania

As requested, we have reviewed the subject draft statement and find that it is adequate with respect to the concerns of this Office.

Anthony M. Cortisiern

September 7, 1978

U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Re: Comments to U.S. Army Corps of Engineers on
Proposed United States Steel Complex
Conneaut, Ohio & West Springfield, Pennsylvania

Gentlemen:

I am a resident of Fairview Township, Fairview, Pennsylvania. I hold a Professional Engineer's license in Pennsylvania and a B.S. and M.S. degree in Sanitary Engineering. I have had ten (10) years of experience with regulatory agencies in water pollution control and 2½ years of experience with a private consulting engineering firm.

I represent no others except myself and have no financial interest in the development of the U.S. Steel Complex. My prime concern is that the development doesn't unduly disturb the environment of the Erie County Area, but I believe our greatest challenge is for the coexistence of the existing land and water uses with industry not to protect our existing uses to the exclusion of industry.

It is inconceivable with all the interests which support the development that proposals for treatment facilities and land development controls will not be adequate to meet standards. The real test is how well those facilities will be operated once the industrial complex is placed in operation. At that point, historically industrial profit becomes the main concern of local plant management not the environment. It would be a disaster both to the Erie Area and to the development of such industrial complexes nationally if severe environmental damages were to result from this complex. As such, it behoves the local citizenry, government of all types, and industry itself to take all the precautions that are possible initially to insure that the operation of the plant and its pollution control facilities do not become an expense without returns, even if those returns are only regulatory approval.

CA-1 A primary concern is the location of the lake discharge point. The regulatory agency which controls the discharge should also have interest in downstream water uses. Without that interest,

enforcement personnel and politicians may lack a proper mix of concerns. The present proposal calls for location of the discharge point in Ohio with all downstream uses in Pennsylvania. Adequate safeguards are not provided to the Pennsylvania residents through regulatory agencies responsible to them and their elected representatives. The mere provision of operation reports and lake monitoring as described by Wesley Gilbertson at the West Springfield hearing are insufficient to insure forewarning of noncompliance. Lake monitoring is difficult as is selection of a representative location due to varying weather conditions, in particular, wind. Winter monitoring will be almost impossible and changes will be subtle and almost impossible to note under normal sample analysis accuracies. Further, no guarantees have been or can be made that the State of Ohio will honor the requests of Pennsylvania, particularly with the present declared opposition of the Governor of Ohio to the policies of the U.S. E.P.A. The outfall should be redirected to discharge in Pennsylvania. Such a relocation should not be difficult and should not be met with resistance by U.S. Steel if they are committed to environmental protection as they state. If that condition is not met or if other guarantees are not provided, then I must take a position of opposition to the complex.

In order to provide other guarantees, I would suggest that U.S. Steel now be asked to commit themselves to providing not only the best available proven pollution abatement program but that they also commit themselves to providing duplicate units or several units instead of one large unit wherever possible in order to minimize the effect of failures of any one unit. Where this is not feasible the critical replacement parts for the abatement facilities should be provided as part of the initial construction costs. Such an approach will ultimately ease the economic impact of any remedial measures required by the local plant during future breakdowns.

CA-2

Another concern is that U.S. Steel now commit themselves to a program to not only prevent pollution incidents but to provide facilities to contain and clean up any unpreventable spills. As an example, it may be appropriate for U.S. Steel to stock booms, absorbancy materials, portable pumps, etc., to contain and clean up any oil spills which may reach Lake Erie or its tributaries.

CA-3

The outfall itself should be studied to determine the feasibility of including means of attaching bypasses in case of pipeline breaks. Perhaps tees and valves could be intersperced along the outfall to allow areas to be isolated, bypassed and repaired if there is a failure. It is inconceivable that a plant of this size will be shutdown for an indeterminate length of time to allow for outfall repair. Thus, provisions to allow repair to occur while the plant remains in operation would appear to be appropriate.

CA-4

U.S. Army Engineer District, Buffalo
September 7, 1978
Page Two

I appreciate this chance to comment and sincerely hope that an environmentally sound alternative can be reached.

Very truly yours,

Gerald C. Allender
6550 Naeff Road
Fairview, Pennsylvania 16415

GCA:ceg

New York State
Grape Production Research Fund, Inc.

September 14, 1978

District Engineer
Attn: Regulatory Functions Branch
U. S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

Please replace pages 9, 11 and 12 with the attached pages. I apologize for any inconvenience this might have caused you.

Very truly yours,

Thomas G. Davenport
President

TGD, ds
Attachments

President – Thomas G. Davenport, The National Grape Cooperative Association, Inc., 2 South Portage Street, Westfield, N.Y. 14787
Vice President – Hamilton Clothier, Silver Creek, N.Y. 14136
Secretary – Tenny D. Jordan, 412 E. Main St., Fredonia, New York 14063
Treasurer – David A. Ivett, Manufacturers and Traders Trust Co., Dunkirk, N.Y. 14048

New York State
Grape Production Research Fund, Inc.

September 8, 1978

District Engineer
Attn: Regulatory Functions Branch
U. S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

The New York State Grape Production Research Fund, Inc. has reviewed the Draft Environmental Impact Statement (DEIS) on the proposed U. S. Steel Corporation Lakefront Steel Mill, Conneaut, Ohio. The New York State Grape Production Research Fund, Inc. desires to submit this statement with respect to the potential for damaging effects to grape crops and grapevines from air pollutants emitted from this facility on the vineyards of Western New York State as well as those located in the States of Pennsylvania and Ohio.

The New York State Grape Production Research Fund, Inc. (the Fund) has been serving the grape industry of New York State since 1954 through support of research in viticulture. The Fund is a non-profit corporation made up of and financed by contributions from juice, jelly and wine processors, grape farmers and associated agribusiness organizations. Since 1968, at least seventy-five percent of the New York State grape production has been represented by those contributing to the Fund. It first funded air pollution research at the Cornell University Geneva Agricultural Experiment Station in 1972. The Fund is not opposed to new industry or

President – Thomas G. Davenport, The National Grape Cooperative Association, Inc., 2 South Portage Street, Westfield, N.Y. 14787
Vice President – Hamilton Clothier, Silver Creek, N.Y. 14136
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Treasurer – David A. Ivett, Manufacturers and Traders Trust Co., Dunkirk, N.Y. 14048

industrial growth such as the proposed Lakefront Steel Mill providing the air pollucant emissions from this plant will not cause damage to grapevines.

It has been estimated that Western New York State grape growers have approximately 55 million dollars invested in vineyards, buildings, equipment and supplies.[6] This investment generated farm income in excess of 17 million dollars in 1976 and was used to pay real property taxes of almost one million dollars.[6] In addition, Western New York State is the home of many of New York's major processors and wineries, including the corporate headquarters of the world's largest Concord grape growing, processing and marketing enterprise.[6] Since a portion of the Pennsylvania and Ohio grape crops are received by Western New York State processors it is of vital importance to the grape growers of Pennsylvania and Ohio as well as those of Western New York State that no new limitatations or handicaps be imposed on the competitiveness of the industry and its contribution to the economy of the area.[6]

The Fund position is that air pollution is now causing damage to the economics of grape vines and grape crops in Western New York State. There are 20,000 plus acres of vineyards in Western New York State located from 50-85 miles east of the proposed Lakefront Steel Mill. These vineyards lie downwind of the proposed facility in the Lake Erie basin which acts as a natural trough trapping the air pollutants emitted by this facility.

CC-1

Air quality in the Western New York vineyard areas will likely be adversely affected by emissions from the proposed Lakefront Steel Mill. Atmospheric concentrations from sulfur dioxide, ozone and other pollutants will be increased. At least some of such pollutants, whether acting together or individually, are known to cause injury and damage to grape vines and grape crops.[6] The extent to which the proposed Lakefront Steel Mill will add to such pollution and damage to Western New York State vineyards is not known and has not been, in the Fund's opinion, adequately addressed in the Draft Environmental Impact Statement.

CC-2

To be specific the Fund is concerned about the following air pollutant emissions which will be emitted by this facility:

1. The primary pollutants of sulfur oxides, nitrogen oxides, the interaction of sulfur oxides and nitrogen oxides, fluorides, heavy metals and particulates.
2. The secondary pollutants of ozone, the interaction of ozone and sulfur oxides, peroxyacetylnitrate (PAN) and acid rainfall.

CC-3

What is known about the above listed air pollutant emissions and their effects on grapevines and other perennial plants is discussed below:

1. Sulfur oxides - research has shown that sulfur dioxide (SO_2) can cause damage to grapevines.[3] Of particular importance is that there was a

CC-4

tremendous productivity loss in the year following the exposures to this pollutant and that there was not a direct relationship between induced leaf injury and productivity loss.[3]

2. Nitrogen oxides - These will not likely have a direct effect on grapevines or other perennial plants. However, nitrogen dioxide is a precursor in the photochemical generation of oxidants such as ozone and PAN.[4] Concentrations of these two pollutants may be maximal many miles downwind of the point source.[4]
3. The interaction of sulfur oxides and nitrogen oxides - The Fund agrees with the Corps assessment in Section 5.73 and 5.102 that the interaction of sulfur dioxide and nitrogen oxides with ozone could cause crop damage to grapes. Research has shown that mixtures of low concentrations of sulfur dioxide and nitrogen dioxide may injure several plant species and the synergistic interaction of these two pollutants can cause crop damage.[4]
4. Fluorides - Research has shown that grapevines are highly sensitive to fluorides.[4,5] Fluorides accumulate in the plant tissue and are therefore potentially more damaging over the long term to perennials such as grapevines than to annual vegetation.[2,4]

5. Heavy Metals - Very little information is available on the effects of heavy metals on grapevines or perennial crops. However, there is evidence that heavy metals can have a detrimental influence on nutrient cycling.[4]
6. Particulates - Research has shown that particulates may cause injury or inhibit photsynthesis of some plant species.[4]
7. Ozone - Grapevines in the Pennsylvania, Ohio and New York State areas are already experiencing injury and damage due to ozone.[4] Research has shown that ozone induced injury to grapevines can result in a reduction in soluble solids[1,5] and preliminary investigations indicate a possible reduction in yield as well. It has been estimated that it would cost in excess of one million dollars to combat ozone injury in the vineyards of New York State, Pennsylvania and Ohio with chemical sprays.
8. The interaction of ozone and sulfur oxides - Very little research work has been done with woody species. However, research in New York State has shown that small increments of sulfur dioxide added to ambient air will increase the amount of ozone induced oxidant stipple injury to Concord grapevines, and will reduce soluble

solids of the grapes (unpublished). The data suggest that sulfur dioxide in the air may lower the threshold for ozone injury to grapevines.

9. Peroxyacetylnitrate (PAN) - Little is known about PAN injury or damage to perennial crops. However, symptomatology studies suggest the presence of phytotoxic concentrates in the Eastern U. S.[4] and the precursors of this air pollutant will be emitted by the Lakefront Steel Mill.
10. Acid rainfall - The effects of acid precipitation on biological systems in urban areas has not been intensively examined. Research has shown that continuous acid precipitation could result in the impairment of photosynthetic and respiratory processes.[4] The Corps' suggestion that sulfate induced pH drop of 0.3 is too small to effect sensitive crops (Sec. 4.659) is untested. A small pH drop at the lower pH levels could be enough to reach the threshold for acid injury to vegetation.

Research in New York State has shown that air pollutants can have the following effects on grape production:

1. A reduction in quality through reduced sugar accumulation in the fruit.
2. Vineyard planting would be restricted to those varieties which are the least susceptible to damage, but might not be the ones that produce

CC-5

the end product most desirable to the consumer. In fact, one grape variety, Ives, is so severly damaged by the air pollutant ozone, that it, for all practical purposes, can no longer be commercially grown in New York State.

3. The cost of production of some important varieties of grapes is increased by the use of cultural practices aimed towards reducing the effects of air pollution on grapevines. These practices have only been partially successful in alleviating the problem.
4. A yield reduction is suggested based upon the limited research to date for several important varieties grown in New York State.

The Fund since early in 1977 has been an active participant as an intervenor in the New York State Public Service Commission Article VIII proceedings regarding the application by the Niagara Mohawk Power Corporation for license approval to construct the Lake Erie Generation Station (LEGS) which is composed of two coal-fired 850,000 kilowatt electric generating units to be located in the heart of the grape belt of Chautauqua County in Western New York State. The Fund sponsored four witnesses in these proceedings. Testimony of three Fund witnesses established the present and potential future economic impact of viticulture in the State. The fourth Fund witness was the pre-eminent viticulture scientist in New York State, Dr. Nelson J. Shaulis, Professor of Viticulture, Cornell University Agricultural Experiment Station,

Geneva, New York. Dr. Shaulis' testimony and exhibits in the case comprise the most significant scientific contribution worldwide to the relation between air pollution and injury and damage to grapevines and grape crops.

A copy of the testimony of these individuals is enclosed as a basis for demonstrating what is known about the economics of the grape industry of New York State and what is known about air pollutant effects on sensitive agricultural crops including grapevines.

U. S. Steel Corporation has agreed only to monitor effects of the Lakefront Steel Mill on vegetation (p. xii, item 8 of Summary). The Fund believes that in addition to the monitoring of air pollutant emissions from this facility that it is of the utmost importance to the grape growers and grape industry of Western New York State as well as those in Pennsylvania and Ohio that there be promptly established a broad based research program such as that outlined by Dr. Shaulis in the proceedings on LEGS.[4]

GG-6

Such research should be planned with regard to the following conditions:

A. There must be a measure of the effect of the predicted and of the actual Lakefront Steel Mill emissions and wastes on the grape crops polluted by it. The research effort should be a minimum of three years pre-operational and three years post-operational as suggested by Dr. Donald

GG-7

Davis in a letter to the Corps (Sec. 5.104). In addition in order to determine what the actual emissions will be there needs to be additional monitoring stations established that are located to the east of the plant site and in rural areas near sensitive agricultural crops such as grapevines. This recommendation was also made by the Corps in the DEIS Section 5.104.

B. Any damage will likely be due to (1) season-long chronic exposure to low concentrations of either single or multiple pollutants or (2) air pollution episodes, or both.

C. The dose of primary and secondary pollutants which envelops the vineyards will be determined by the emissions and their dispersal which are highly variable.

D. Grape varieties have major differences in tolerance to pollutants. For example, research conducted in Japan has shown the Fredonia grape variety to be more sensitive to SO_2 injury than the Delaware variety.

E. Water, nutrients and protectants can substantially affect the amount of pollutant injury and damage to grapevines.

F. The items believed to be of highest priority are related to chronic damage by SO_2 or ozone, or both.

The problem is complex and primarily one of pollutants or pollutant mixtures of low concentration over a long exposure which may cause injury to grape leaves, but also may, independent of leaf injury, damage grapevines.

G. In addition, such an effort should include an advisory committee comprising qualified air pollution researchers and be conducted with the advice of experienced viticulturists involved in the planning, execution and analysis of the program.

In summary, the grape vineyards of Western New York State are located some 50 to 85 miles east and downwind of the proposed Lakefront Steel Mill located at Conneaut, Ohio. These 20,000 plus acres are located principally in Chautauqua County, New York State along the south shore of Lake Erie, because of the moderating influence of this Great Lake on the climate. They enjoy a history of the least frost damage of any major Concord producing area in the country. It is this climatic advantage, combined with the viticultural expertise of its producers, that has enabled this area to attain and maintain its position as the single most important grape producing and grape processing district in the United States, outside of California.[6]

CC-8

The wine and unfermented juice segments of the New York State grape industry must compete with California and Washington wineries and processors, both areas of higher light intensity and grape

yields than New York State.[6] Because vineyards on the Lake Erie basin are near the northern limit for viticulture they are limited by their aerial environment more so than vineyards in these above named areas. The present pollution by ozone makes the aerial environment of the grapevines along Lake Erie even more limiting and any additional pollution of the environment from the emissions produced by the Lakefront Steel Mill will likely bring additional restrictions to those vineyards. Any diminution of vineyard yield or raw product quality resulting from increased air pollutant damage from this plant would significantly increase both production and processing costs and could seriously jeopardize the competitiveness of New York grape products in the market place. There is also, in the opinion of the Fund, an interdependent relationship between the grape growers of Pennsylvania and Ohio, and the grape processors and wineries located in New York State. Much of the grape crop from Pennsylvania and Ohio is processed by and/or marketed through New York State grape processors and wineries.[6] These processors and wineries depend upon the continued supply of grapes from these areas. The grape growers of Pennsylvania and Ohio depend upon the processors and wineries of New York State for a secure market for their grape crops. To the extent that air pollutant emissions from the Lakefront Steel Mill cause damage to the vineyards of Pennsylvania and Ohio it could seriously endanger the viability of the New York State processors and wineries as well as the grape growers of Pennsylvania and Ohio.

The Fund does not believe that there has been an adequate factual basis presented in the Draft Environmental Impact Statement

to demonstrate that the air pollutant emissions from the proposed Lakefront Steel Mill will not adversely effect the grapevines and grape crops. As indicated in Section 5.103 of the DEIS there is very little research data available on agricultural crop damage due to air pollutants. In Section 5.105 of the DEIS there is stated that if the area vineyards are found to be adversely affected by air pollutant emissions there are several options that can be exercised to minimize damage. The Fund does not believe that there is any evidence available to indicate that the options outlined in the DEIS Section 5.105 will in any way minimize damage to grapevines other than ozone induced damage to grapevines. There is simply no scientific evidence to indicate that these measures will in any way minimize damage from the other pollutant emissions from the Lakefront Steel Mill. For the owners of the vineyards located in the Lake Erie basin and already damaged by ozone, an inescapable question not answered by the Corps in the DEIS still remains. That is: will the proposed Lakefront Steel Mill pollutant emissions either acting singly or in combination cause damage to grapevines or grape crops at any point in the area polluted by this facility. The environmental compatability of the Lakefront Steel Mill with grapevines and grape crops in the area polluted by it can, in the opinion of the Fund. be determined and measured in a useful way - useful and necessary to the grape growers and the grape industry of the area. The Fund recommends that there be promptly established a broad based research program such as that outlined by Dr. Shaulis in the LEGS proceedings to

determine what effect the air pollutant emissions from the proposed Lakefront Steel Mill will have on sensitive agricultural crops such as grapevines. This research program should not be limited to the local effects on agricultural crops but should also include studies on the long range transport of pollutants to the more distant vineyard areas of Western New York State in the Great Lakes basin east of the facility.

Respectfully submitted,

Thomas G. Davenport
President

TGD/ds

Enclosure

REFERENCES

[1]Musselman, R. C., W. J. Kender and D. E. Crowe, 1978. Determining Air Pollution Effects on Growth and Productivity of Concord Grapevines Using Open-top Chambers. J. ASHS 103: 645-648.

[2]Brewer, R. F., R. C. McColloch, and F. H. Sutherland, 1957. Fluoride Accumulation in Foliage and Fruit of Wine Grapes in the Vicinity of Heavy Industry. Proc. ASHS 70: 183-188.

[3]Fujiwara, T. 1970. Sensitivity of Grapevines to Injury By Atmospheric Sulfur Dioxide. J. Jap. Soc. Hort. Sci. 39: 219-223.

[4]Air Pollution Working Group, Pinchot Institute Consortium for Environmental Forestry Studies. Air Pollution and Metropolitan Woody Vegetation. 1975.

[5]Kender, W. J., and R. C. Musselman, Oxidant Stipple: An Air Pollution Problem of New York Vineyards. New York Food and Life Sciences Quarterly, October-December 1976.

[6]New York State Grape Production Research Fund, Inc. Testimony of Research Fund Witnesses in the New York State Public Service Commission Board on Electric Generation Siting and the Environment Case No. 80,007. 1977.

A-00

Sep. 8, 1978

Department of the Army
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

A suggestion for the proposed U.S. Steel Mill near Conneaut, Ohio, would be to relocate the planned mill farther east on the plant site inside Pennsylvania. This might enable them to preserve Turkey Creek at its present natural port at the lakefront and the runoffs from the hills of Pennsylvania, thus enabling preservation of the coldwater creek.

HC-1 It would appear from your maps of the plant site's present location that U.S. Steel intends to border their facilities on the P&C Dock Company storage facilities. Then, if they relocated farther east of the present site, obviously more roads and bridges would be necessary although P&C storage facilities would still be very near and accessible.

The most heard argument against the U.S. Steel Mill proposed site is that of the character of the employees generally associated with this type of manufacture. The population here is fearful of changing their peaceful small towns into large cities with a high rate of crime. Yesterday I spoke to someone that there was a cloud over our neighborhood due to a recent arrest. He replied that it would be worse if the U.S. Steel Mill is built here and there would be a much bigger cloud.

Yours truly,

Helen W. Clark

Helen W. Clark
367 Old Main Rd.
Conneaut, Ohio 44030

593-5575

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
REGIONAL OFFICE
300 SOUTH WACKER DRIVE, CHICAGO, ILLINOIS 60606

September 12, 1978

REGION V

IN REPLY REFER TO
HPB:vrh 5C

Mr. Daniel D. Ludwig
Colonel, Corps of Engineers
District Engineer
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This is in response to your letter dated May 23, 1978 wherein you provided for our review and comment the Draft Environmental Impact Statement prepared for the proposed U.S. Steel Corporation Lakefront Steel plant, Conneaut, Ohio. In concert with the Philadelphia Regional Office of this Department we offer the following comments regarding this proposal.

HUD-1 The discussion under the heading of Low-Income Housing in section 2,134 also makes reference to moderate income housing. Consequently, we suggest that the heading be changed to Low and Moderate Income Housing. The discussion should also be broadened to include the Section 221(d)(4) program which is aimed at providing housing within the price range of moderate income families. The rent supplement, Section 235 and 236 programs are no longer active subsidy programs in the sense of new commitments being made. The principal subsidy program currently administered by HUD is the Section 8 - Housing Assistence Payments Program for lower income families established by the Housing and Community Development Act of 1974.

HUD-2 The discussion of impacts on housing beginning on page 4-100 focuses principally on the total demand for various types of housing units - new, existing and temporary. The final statement should extend the analysis of housing impact and need into considerations of sales price and rent ranges as important elements of the demand picture.

HUD-3 The discussion of low-income housing demand (p. 4-122) draws general conclusions on the future need for such housing, but does not present any basis for the assertion that, "the need for temporary or permanent housing associated with the proposed plant is not expected to directly affect the demand for low-income housing."

The Draft EIS unfortunately equates the issue of low-income housing with public housing in the discussion of Low-Income Public Housing (p. 4-122). As noted in the discussion of Low-Income Housing on p. 2-160, programs, other than

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traditional public housing are available to meet the needs of low-income families.

HUD-4 Appearing on page 4-469 is a discussion of secondary impacts as they relate to agriculture land use. This is expressed only in terms of the Regional Study Area. Given the extent of the Regional Study Area, the actual impact of losing a total of 1200 acres of agricultural land is less significant than if it had been expressed in terms of agricultural land developed in the principal study area or the Coastal communities. In this regard, the EIS should also have attempted to identify the amount of prime farmland that would be adversely effected, in absolute terms and as a percentage of the total supply especially in the Principal Study Area and Coastal Communities.

HUD-5 Paragraph 5.40 notes incorrectly that an application for a Community Development Block Grant is made through HUD Regional representatives (Philadelphia for the Pennsylvania communities and Chicago for the Ohio communities). This should be revised to read that application is made through HUD Area Offices (Pittsburgh for Pennsylvania communities and Columbus for the Ohio communities).

HUD-6 The section on mitigation of adverse environmental effects of secondary impacts which cannot be avoided should be further developed. In particular a number of public expenditures will be required to accomodate quantified growth impacts, placing demands upon local state and federal agencies for funds. There will exist a need to establish priorities and justifications for such expenditures. Some particular projects may require direct coordination between localities and the states. Federal agencies have recommended the establishment of an interstate machanism between localities and/or the two states to provide a continuing mechanism for planning and policy coordination. The evaluation by Brian J.L. Berry in Appendix B indicates specific activities which local planners should consider, possibly on a coordinated basis through such an interstate mechanism. The establishment of such an interstate mechanism would measureably aid the handling of secondary impacts by the localities, states, and the federal government and is one mitigating action that should be identified in the Final EIS. This is particularly important since many of the developing secondary impacts can not be clearly identified inthe E.I.S. (see additional comments in the Berry evaluation dealing with the shortcomings of the Arthur D. Little analysis).

HUD-7 Table 2-31 indicates 1980 Ohio population baseline projections as 104,400 and 1990 as 109,800. These figures vary from recently released projections being used by the Ohio EPA (under U.S. EPA requirements) which indicate a baseline projection for Ashtabula County of 102,244 for 1980 and 108,706 for 1990. This inconsistency should be resolved.

HUD-8 Although we have no specific comment ourselves on the issue we note that several analytical comments regarding population projections have been submitted to your agency. It is essential that any disparities be resolved as conclusions resulting therefrom are fundamental to assessment of primary and secondary impacts of the project. The Berry evaluation (BIG) offers several sources for resolution of such comments.

HUD-9 Figures 1-1 and 2-53 indicate a Conneaut Interstate Industrial Site south of U.S. 20 and the Proposed Lakefront Plant Site. It is unclear whether this is part of the site or not. It is also unclear what is the useage or intent for this site since paragraph 1.344 on p. 1-267 indicates no new off-site support facilities are expected. Further clarification regarding this area is needed, particularly in regard to its possible affect on secondary impact and/or industrial development.

HUD-10 We find no comment regarding the flood carrying capacity of Conneaut Creek in the event Turkey Creek is diverted to Conneaut Creek. Under any alternative eventually selected we recommend that the flood carrying capacity of both water courses, at a minimum, be maintained at existing levels. Additionally, communities affected by any diversion of flow should be notified of the project and its resultant effect on flood heights.

We appreciate the opportunity to review this proposal.

Sincerely,

R Gatt

Ron Gatton
Regional Administrator

747 Buffalo St.
Conneaut, Ohio 44030

July 18, 1978

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

RE: U.S. Steel Mfg. Plant, Conneaut, Ohio

Gentlemen.

Please accept this as a statement of opposition to the proposed steel mill. My reasons follow

1. The steel mill will destroy our rural way of life. Many people have stayed in or moved to Conneaut because it is a small town.

JB-1 2. The streets, sewer system, schools, etc., are not sufficient to support the increased use that will be required.

JB-2 3. Increased police and fire protection will be required.

4. Property taxes will have to be greatly increased to finance increases/improvements of items listed in No. 1 and 2 above.
JB-3 This will be particularly true during the construction period although if the records of other steel mill areas are used (i.e. Bucks County, Pa.) higher taxes will continue.

JB-4 5. It appears also that Pennsylvania will receive more tax dollars from the mill than Conneaut will.

6. The steel mill will provide few jobs for local people.
JB-5 Naturally the mill will wish to employ trained steel workers. It is well known that the unemployed steel workers in the Youngstown area are already planning to obtain jobs and commute daily to Conneaut.

7. Originally proponents of the mill claimed that satellite industries generated by the mill would employ local people.
JB-6 Now they have publicly admitted (after the low population increase figures were projected by the A. D. Little study) that the type of steel to be produced will not be conducive to satellite industries.

JB-7 8. If the steel mill pays higher wages than local industry, it may even cause Conneaut to lose industries (jobs) already available to local people.

JB-8 9. Conneaut at present has less pollution than most other cities in Ashtabula County. The steel mill will greatly increase air and water pollution in the entire area.

Continued

JB-9 10. The pollution will have an adverse effect on the extensive agricultural industry of the area.

JB-10 11. Turkey Creek will be destroyed eliminating fish and wildlife. This is one of only seven like streams in Ohio.

JB-11 12. There will be no public access to Lake Erie from the Public Dock in Conneaut to Raccoon Creek Park in Pennsylvania.

JB-12 I urge you not to issue this permit to U.S. Steel. Surely there is a more suitable location for this mill.

Very truly yours,

(Mrs.) Joan N. Barnett

jnb/

The Department of the Army
U.S. Army Engineer
Buffalo District
1776 Niagara St.
Buffalo, N.Y. 14207

5 Sept 74

Dear Sir

I am a resident of Erie, Pa. and I would like to make a public statement concerning the proposed Conneaut, Ohio U.S. steel mill.

I am opposed to the building of the steel plant in the proposed location for the following reasons:

JW-1 1) Industrial pollution from such a plant as will cause environmental health problems (such as cancer and respiratory illnesses) to Erie area residents.

JW-2 2) Recreation areas such as Presque Isle State Park will become contaminated with effluent because of the prevailing west to east current in Lake Erie. Some fish populations will diminish along with water quality. Destruction of Turkey Creek is just the beginning of environmental devastation to the area.

JW-3 3) U.S. Steel has a past history of environmental lawsuits.

JW-4 4) Economically, taxes and inflation will rise along with home construction.

JW-5 5) Too many questions have arisen about the adequacy of the environmental impact statement; it appears the method the report was performed as a routine gesture instead of a true environmental assessment.

I hope that you gentlemen will consider the disadvantages of the proposed steel mill and disallow further construction.

Thank you for accepting my statement,

John Wisniski
1019 Wallace St.
Erie, Pa. 16503

A-133

1184 Oneida Street
State College, Pennsylvania 16801
September 8, 1978

Colonel Dan Ludwig
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig,

I'm writing now to offer my comments on the Draft EIS for U.S. Steel's proposed Lakefront Plant at Conneaut, Ohio, and on the project in general.

Some information about myself: I've lived in East Erie and Lawrence Park nearly all my life (23 years), and I'm currently studying ecology, anthropology, and geography at Penn State. My family owns one of the houseboats in Horseshoe Pond at Presque Isle, and that park has given me many valuable experiences - I feel former familiar with it than most. I attended the public hearing in Erie in August, 1978, and have perused the DEIS, but not to the depth I would like.

Here I must compliment the authors of the DEIS - they strived to integrate and condense a large volume of research on a very wide range of topics. I marvel at the product they've come up with, and I am saddened that I haven't found the time to digest it thoroughly. This sentiment is only sharpened by what I see to be a reluctance by much of the public to try to comprehend what the DEIS has to say.

From what I have learned, I feel I must oppose the construction and operation of the Lakefront Plant on several grounds.

RE-1 The plant's main proponents see it as somewhat of an economic panacea for the Conneaut-Erie area. Though the DEIS does predict a decrease in unemployment, a fair amount of unemployment will still exist upon the plant's

operation. Though it would certainly yield an increase in the number of jobs available, the Lakefront Plant would not nullify unemployment.

One of my main concerns is the water quality impact. With the Great Lakes serving as somewhat of an industrial sewer for America's Manufacturing Belt, I'd rather not see any more dangerous (such as in Tables I-26, I-28) chemicals discharged into Lake Erie. Communities around Erie are already downstream from several industrial cities, notably Cleveland and Detroit, and as you may know, the Great Lakes area has been shown to have a high incidence of cancer (which many believe to be environmentally induced). This impact concerns me more than the enhanced eutrophication of Lake Erie that is predicted by the DEIS. As the man from the EPA remarked at the Erie meeting, the eutrophication caused by the plant directly and indirectly would be but a "drop in the bucket" for a lake whose accelerated aging is thought to have been arrested (or nearly so).

KE-2

Unless I misunderstand the proposals, I think it is a very poor idea for the U.S. Steel plant to be built and in operation, and then to build a monitoring station at the City of Erie's water intake. This seems to me rather like buying fire alarms just after you've given some matches to an arsonist.

Another of my concerns is that this plant will be highly automated and energy intensive. Here, my concern focuses on the fact that the electricity to be consumed by this plant will come from a power grid that is in no small way supplied by nuclear-generated electricity. Though it is easy to view the proposed Lakefront Plant and the proposed nuclear power stations as two separate issues, the plant's highly consumptive energy requirements in some ways legitimize the

KE-3

need for the atomic plants. I feel that nuclear reactors are a dangerous and unproven technology (no safe method has yet been devised for disposing their long-lived deadly wastes), and perhaps save for the requirements of heavy industry, they are an unnecessary technology. I could cite other criticisms of nuclear power, but that is not the main intent of this letter (After 3 decades of promoting nuclear power, the Federal Government is just beginning to look at the side effects — — I strongly urge you to read Nuclear Power Costs by the Committee on Government Operations, House Report 95-1434, April 26, 1978).

KE-4 My least concern is mainly a social one. I've seen predictions that show the Conneaut-Metropolitan Erie area becoming the home of another 30,000 to 100,000 new people, should the Lakefront Plant become operational. I personally would not like to see the metropolitan Erie area "grow" to become the likes of another Cleveland or Buffalo. Nor am I happy about the prospect of the area moving toward what futurists call the Great Lakes Megalopolis. I think that the rural lands on Lake Erie are rare and delicate in character and definitely feel that the Lakefront Plant and its attendant impacts would diminish this quality.

KE-5 Furthermore, I feel that at least for the social impact - this total alteration of the Conneaut-metropolitan Erie area socially — the people living there should at the very least be polled as to their feelings on creating this new population center on the heels of the Lakefront Plant, with its radical change in lifestyles for the area.

One thing I've learned about new technological proposals (such as the proposed steel plant) is that, unlike humans, they should be assumed guilty until proven innocent. When deciding whether or not to implement them, it is better to err on the side of safety.

Thank you very much for reading my letter. I hope that you will consider what I've said, and may your decisions reflect the wishes of the people it affects.

A-196

Very sincerely yours,

Kirk Evans

R.D. #2 Perry Highway
Waterford, Penna. 16509
September 4, 1978

U.S. Steel Mill Hearings
Department of The Army
Buffalo District, Corps of Engineers
1776 Niagra Street
Buffalo, New York 14207

Dear Sirs;

I am opposed to the construction of the proposed U.S. Steel Mill at Conneaut, Ohio and West Springfield, Pennsylvania for the following reasons.

First, I see no reason why it is necessary to build the steel mill in an area which includes two salmon streams that will be destroyed during construction. Turkey Creek will be reduced from a length of 91,000 feet to 74,000 feet and channeled into Conneaut Creek through a ditch 16,000 feet in length. Not only will this construction destroy the mouth of Turkey Creek, but it will also produce enough silt to destroy Conneaut Creek from the confluence of the channel to the lake. The Environmental Impact Statement says that an erosion control device would be built at the confluence of the two streams, but no mention is made of building silt control devices along the length of the proposed channel. I feel it is easy to understand how 16,000 feet of unprotected, freshly exposed soil would turn the mouth of Conneaut Creek into a mudhole. It is little wonder that the State of Ohio would terminate the stocking of salmon in this watershed. Turkey Creek and Conneaut Creek are two of only nine streams listed by the Ohio Environmental Protection Agency as being coldwater habitat. Is it so important that the steel mill be built at this site that nearly one forth of the cold water habitat in Ohio be destroyed? I have heard that a compromise meeting will be held to solve the problem of Turkey Creek. My viewpoint is that the only way to prevent both Turkey Creek and Conneaut Creek from being permanently damaged is to build the steel mill at another site. No amount of rebuilding or relocating could protect Conneaut Creek from the pollution created by the world's largest steel mill. You must remember one thing; if you pollute the mouth and the waters offshore you will kill a salmon and steelhead stream just as surely as acid mine waters draining into the headwaters of a trout stream will kill fish below the polluted tributary. The salmon and trout have brought new life to Lake Erie. The steel mill would end it.

KEE-1

I am very much concerned with the problem of suspended solids create by construction of the mill. Consider that the site includes 2,760 acres of land, and that between ten and twenty tons of soil would be eroded from each acre per year while the mill was being built. This load of suspended solids would find its way into the lake and cause great damage to the insect life and fish larvae in this area. Damage from silt would not be limited to the area off Conneaut Creek. For example, Elk Creek would receive a suspended solids load increased by 70 tons in 1981, 150 tons in 1985 and 250 tons in 1990. Crooked Creek would receive an additional 90 tons in 1981, 200 tons in 1985 and 450 tons in 1990 due to land use activities related to the steel mill. These annual increases are based on a population growth of 16,000 people. It has been estimated that the actual population increase would be closer to 45,500 to 58,500 people. I think it is clear that steel mill related growth would cause much greater damage to the lake and its tributaries than originally estimated. The loads of suspended solids entering these watersheds would limit the reproduction of fish and insect life; the blanket of silt created would smother everything it covered. To allow the destruction of these waters from the urbanization which will

KEE-2

KEE-3

surely follow the construction of the steel mill would be criminal in nature. One section of Conneaut Creek was once a wilderness area. The majority of land surrounding the proposed steel mill is rural, beautiful country. The land should be kept green and the streams kept clean. Steel mills should be kept where the people and the parking lots already exist.

Water pollution and fish kills would result from the construction and operation of the plant. The intake tube providing water for the steel mill would trap small fish and fish larvae. The blasting required for construction of the intake and discharge pipes would cause fish kills and probably the temporary abandonment of the area by various species. The construction at Turkey Creek and Conneaut Creek would "release heavy metals and nutrients into the water column and could cause fish kills...". The discharge from the plant would dissapate part of the excess heat generated during operations, possibly causing thermal pollution. The effluent could have toxic effects on fish. For example, the discharge is expected to contain 1 to 2 micrograms of residual chlorine per liter. The worst case concentrations of this chemical would be about 4 micrograms per liter (4 ug/l). The E.P.A. criterion is 10 ug/l for most fish. For salmonid species it is 2 ug/l. Even after mixing with other waters, the average discharge would contain residual chlorine concentrations very near the allowed limit for trout and salmon.

KEE-4

Advocates of the plant claim that the mill would not create heavy metal pollution of the lake, since this is a problem usually associated with the use of scrap metals in the steel making process. As now planned, the steel mill would use only iron ore for production. If built, there would be room for expansion of the presently designed plant. U.S. Steel has indicated that it would probably enlarge the mill after it is operational.

KEE-5

There would be room to construct a scrap metal handling facility. U.S. Steel has given no assurances that it would not use scrap metal if the economic situation were favorable. Considering that recycled materials are replacing raw materials as we use up our natural resources, the possibility for heavy metal contamination becomes more likely as a long range effect of the plant.

Water draining from roadways would contain lead and sulphur emissions from automobiles. This pollution would be proportionate to the population increase and greater use of highways in the area. Off hand, I cannot think of a lake tributary which is not crossed by Interstate 90, route 20 or route 5. The concern over the discharge from the plant has caused officials of the City of Erie to urge the construction of water monitoring stations. While the water currently used by the City is relatively clean, operation of the mill might require the City to construct additional purifing mechanisms. Concern for the quality of water on Presque Isle beaches has also been voiced. Last, many persons feel that the quality of fishing in Lake Erie will decline if the plant is allowed. Roger Wagner, a biologist for the Pennsylvania Fish Commission, has stated that fish kills from the plant would be a "foregone conclusion". He disagreed with the evaluation of this area of the lake in terms of use as a spawning area, and remarked that the lake waters from the Ohio-Pennsylvania line to Dunkirk, New York were a fragile area containing nursery and spawning grounds for several species. He was most concerned with the possible damage to yellow pike, though it is known that the effluent would effect lake trout, perch and other fish as well.

KEE-6

Airborne pollutants from the proposed steel mill have caused great concern. The primary pollutants would be particulates, sulphur oxides,

oxides of nitrogen and hydrocarbons. Coke would be produced from coal at the site. It is known that coke ovens are a major producer of benzene emissions. Last year benzene was added to the E.P.A.'s list of hazardous air pollutants. The draft of the environmental impact statement claims that hydrocarbons would increase only 6% and that nitrogen oxide emissions would increase by 26%. Volitile hydrocarbons and nitrogen oxides have been linked to the production of ozone in the atmosphere. Ozone is a respiratory irritant and considered toxic. The draft of the environmental impact statement points out that photochemical oxidants and hydrocarbons in this Air Quality Control Region would have a non-attainment status with National Ambient Air Quality Standards. The draft states that

> "the incremental addition of ozone as a result of the Lakefront Plant operations would not be high. However, the total, when added to ambient levels, may be enough to increase chronic injury in such crops as grapes, corn, wheat, oats, barley, potatoes and tomatoes."

KEE-8

Furthermore, while information about the interaction of ozone with other airborne pollutants is limited, it is known that such interactions with sulphur dioxide and nitrous oxide "can cause acute and chronic injury at lower concentrations than those observed individually". Thus the creation of ozone would enhance the damaging effects of other pollutants. It is little wonder that farmers in Erie County are united against the steel mill.

KEE-7

Proponents of the Lakefront Plant are quick to point out that particulate emissions from the plant would not effect the City of Erie. While Erie City and parts of Ashtabula County are non-attainment areas for particulates under N.A.A.Q. standards, the particulates from the mill would generally not enter the Erie City Air Basin. I would like to point out that while the particulate emissions would not violate the standards, they would come close to doing so. Consider that the annual geometric mean

background for particulates in the area of the site is 51 micrograms per cubic meter(ug/m^3). The steel mill would add another 5 ug/m^3 for a total of 56 ug/m^3. The standard for the area is 60 ug/m^3. I think you can see that the air in our region is not particularly good; the mill would make it worse, even if it did not exceed the standards.

I can recall that during one broadcast program concerning the steel mill the statement was made that the emissions from the plant would not create acid rainfall. Paragraph 4.763 on page 4-856 of Volume III of the draft contains the following: "Elevated levels of phenols, iron and lowered ph due to acid rains were observed in Turkey Creek under baseline conditions, with one possible source being urban areas upwind." Furthermore, while average unpolluted rainfall has a ph value of about 5.6, rainfall in Erie County averages about 4.5 . Cars equipped with catalytic convertors are a source of sulphuric acid mist and a suspected contributor to acid rainfall. What will the addition of 50,000 rather than 16,000 new residents mean in terms of automobile produced pollutants? Another source of sulphur dioxide will be the Penelec built Coho Power Plant. According to the Erie Times, after the removal of 99.5% of particulates and 90% of the sulphur dioxide produced, the plant would emit 5,988 pounds of sulphur dioxide, 3,453 pounds of nitrous oxide and 424 pounds of particulates per hour. Advocates of the mill claim that sulphur dioxide emissions will not cause damage; ironically, the higher the content of sulphur oxides in the air, the more difficult the production of acid rain becomes. Acid rainfall will not cause obvious damage to foilage until a ph value of about 3.0 is created. Must it rain vinegar before the rain in Erie County is considered acid? In an article entitled "The Sulfur We Breathe", by James W. Sawyer (Environment Magazine, vol. 20, March 1978, pp. 25-31.), the statement is made that

"even where sulfur dioxide levels are within Federal limits, sulfate salts and sulfuric mists may occur at dangerously high levels, particularly in the northeast where prevailing winds bring contaminated air from the Midwest." The article continues to state that even if local sulfur dioxide concentrations "fall off drastically, local sulfate concentrations stay high - alarmingly high as far as epidemiologists are concerned (yet)." I realize that steel mills are not as great a producer of sulfur dioxide as other industries, but I am convinced that the air pollutants from the Lakefront Plant would be enough to cause health problems in this area. I am also convinced that Erie County now receives acid rain, the pH of which would be markedly lowered by emissions from the steel mills. It is clear that air pollution from the proposed steel mill would limit the expansion of established industries, damage crops and wildlife, and make Erie County a much less desirable place to live than it is presently.

I was dismayed to learn that the meeting concerning possible compromise between steel mill planners and environmentalists was to have results for September 20th. Surely you know by now that I believe there can be no compromise of Turkey Creek or Conneaut Creek. I have stated my views that the steel mill would bring too many people and too much pollution into Erie County. There are alternate sites where the mill could be built. These are areas where the parking lots and the people with the expertise are already located. It does not make sense to tear up God's green earth and create a megacity along the lake when there are other locations with empty buildings and jobless steelworkers. The term "brownfield" signifies something dead and dirty. If U.S. Steel thinks that building on such a site would be too expensive, perhaps they should try to build a steelhead stream or a living tree. The Army Corps of Engineers must issue the first permit for the construction of this plant. If you have any sense of the value of our environment, you will deny that permit. To allow the building of the world's largest steel mill in an area as beautiful as western Erie County would be a sin you must not allow. Thank you.

Yours,

Karl E. Ebert

September 6 1978

Col. Daniel Ludwig
Department of the Army
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York

Dear Sir:

I am completely opposed to the proposed construction site of the Conneaut Lakefront Steel Plant for several reasons.

Considering the number of days this summer that air stagnation advisories were in effect, I shudder to think of the number of people who would have been hospitalized or, perhaps, killed by the noxious gases the plant would emit. Even when the pollution-control devices were effective, their use would have been to drive these gases into the nearby residential areas, farmland, vineyards, nurseries, and countryside.

When we consider the effects that this plant would have on the actual site, we must remember that endangered species were found there! We are speaking of an area comprised of a magnificent array of habitats that is, in many such as the Perry Ridge Ore Storage Facility, fighting to return to its natural state. In other areas, such as the woodland at the East end of the site, the battle is almost over, as shown by the most beautiful signs of victory - ranging from tiny flowers to mighty oaks and tulip poplars - accented with a fascinating array of animal life.

LPT-1 Considering the impact of such a plant on the area, I can not see any benefit to a greenstone plant. If U. S. Steel wants to damage an area by constructing a new plant, why don't they select one of their current plants that is being closed due to its older, less efficient processing methods. If this were done our area would not feel the ill effects of the new plant; instead an old, out of date plant would be replaced by an up to date one, and the work force could remain at its current location.

There are several obvious shortcomings of the Environmental Impact Statement; not the least of which is its

short period of study. It seems as though only the best interest of U.S. Steel were taken into account when we consider the short time period (one year) and the green field crews that were used to gather the information (as a result of expensive sub-contracting). As a result of this unprofessional action many important aspects of the study had to be omitted due to insufficient data.

LPT-2

Another point of contention is the 3.0 m. depth limit that was used for the study, especially in light of the fact that this was during the winter & feeding patterns of certain species of fish in the freshwater lakes.

LPT-3

Many comments were voiced at the month's meeting held last year, along with numerous fish census lists, and again it has been proposed that Turkey Creek and its tributaries would be filled in. This is shocking considering the number of fish that live in and/or reproduce in this stream (Rainbow trout, Chinook and Coho salmon, for instance!) The idea of filling in Turkey Creek and developing the area is even more unbelievable when one takes into consideration the run for salmon that was found in this region last year!

LPT-4

Lake Erie has a unique ecosystem that unfortunately has been spoiled by the pollution from the world's largest steel plants that could be obsolete within thirty years. Did we consider the Muskies, Trout and Salmon populations, the fact that the area of the site is the last strong hold in Pennsylvania for rare Woodcock and Snipe breeding populations, and the other interdependent terrestrial plant and animal populations, & must I state my personal opposition to the proposed U.S. Steel mill and its environmental and socio-economic impact.

LPT-5

One less immediate but quite possible impact of having the mill in Conneaut involves consideration of the effect of such a mill if a foreign power were to attack the United States. Erie would no longer be among the top one hundred bomb targets - our area would then be among the top ten or less!

I can see no good effects arising from this proposed construction, only damage to the environment and those who care about it. Only the greedy could benefit and unless this area is far removed from the site, this benefit would be short lived, indeed!

Respectfully yours,
Leroy D. Fillman

ALVIN W. LEVENHAGEN R. D #2, Linesville, Pennsylvania 16424

September 13, 1978

Mr. Daniel D. Ludwig, P.E.
Colonel, Corps of Engineers
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

SUBJECT: NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corp.

Dear Colonel Ludwig:

I am a member of the Impact Review Committee for Northwest Pennsylvania with specific interest in the U.S. Steel Plant planned for the area.

I have talked with people in Ohio as well as in Northwest Pennsylvania and can find no one outside of the Pennsylvania Fish Commission who knows of any earthly value for the Turkey Creek Channel other than to carry off surplus waters in the event of heavy rains in the vicinity of the intersection of Route 5 and 20.

According to people in Ohio, this creek inadvertently got made part of the Environmental Resources Department's project under the administration of Governor Gilligan. It never was removed and should have been.

LV-1 In talking to people in the Springfield Township area, I find no one who uses that creek to catch fish because there are no fish in it.

I believe there are far more important factors relative to this Mill that must be considered. The impact on our society and the need for this Mill is undisputed. This will certainly give the Northwestern Pennsylvania, Northeastern Ohio business area a tremendous boost in activity and an opportunity to grow.

The coming of the Mill will once again make the United States the leader in the production of steel. I cannot agree with people who worry about contamination of our resources because I am told that mills of this type are built on the waterways in Japan and the sea and fish life are unaffected by it. The Japanese people being dependent on fish for their diet would certainly have suffered had there been the contamination problems our many representatives of the Fish Commission and the Environmental Resources Group envision.

MEMBER OF: American Management Association
National Management Association
Meadville (Pa.) Chamber of Commerce
The Society of the Plastics Industry, Inc.

I would urge you to minimize the impact of the Turkey Creek affect on this Mill project and to proceed with the approval of it provided the channel LV-2 established by U.S. Steel will adequately handle the run off waters that are usually encountered in heavy rain seasons in the area specified.

Yours very truly,

A. W. Levenhagen

AWL/dah

CC: Roy Brandt
Ed Edinger
George DeArment
Oakley Lamb

709 Hilltop Road
Erie, PA 16509

June 16, 1978

Daniel W. Ludwig
Colonel, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The League of Women Voters of Erie County, in conjunction with the Ashtabula, Ohio, League, has prepared a statement of our positions in regard to particular environmental issues which may be affected by the construction and implementation of the U.S. Steel Plant in Springfield and Erie Counties.

We would like your Department of the Corps to assure us that all of the points in our positions will be seriously considered before permission is granted to construct the aforementioned Steel Mill.

We have received a copy of the Draft of the EIS. Our committee is planning to study it and we will be prepared to comment on it. If there is any way we can serve the citizens of our community in this regard, please let us know.

Yours truly,

Barbara Bol
Barbara Bol
Chairman, Land Use Comm.
LWV of Erie County

Enc.

TO: Army Corps of Engineers

DATE: March, 1978

STATEMENT: Re Environmental Impact of Proposed U. S. Steel Mill Complex To be Located between Conneaut, OH and W. Springfield, PA

BY: Ashtabula County League of Women Voters
1331 Pennsylvania Avenue
Ashtabula, OH 44004

Erie County League of Women Voters
7271 Willow Way
Fairview, PA 16415

We, the League of Women Voters of Erie County, PA, and Ashtabula County, OH, as members of the League of Women Voters of the United States, have been concerned about the depletion and conservation of natural resources since the 1920's. The League has built a sequence of positions on water, air, land conservation, solid waste management, and energy.

League members have increasingly seen the need for pollution abatement as a necessary element in water resource management. The League's anti-pollution goals will be well served if toxic substances are controlled at the outset before they go down the sewer and into the lake.

We support the Water Resource Planning Act of 1965, the National Environmental Policy Act of 1969, the Water Resource Research Act of 1964, and especially the Federal Water Pollution Control Act and its amendments.

The League of Women Voters feels that comprehensive planning, development, and water management on a regional basis, are essential to the optimum development of the nation's water resources. We support limited federal financial assistance to industry as a means of expediting abatement of water pollution. Strict enforcement of anti-pollution measures should be effected with or without financial assistance.

The League members believe strongly that it is very important that full implementation of the Clean Air Act of 1970 be carried through with emphasis on preventing the erosion of earlier gains and the deterioration of air in relatively pure-air areas. This means that federal, regional, state and local levels of government must challenge infractions that continue uncorrected, and - most important - must oppose easing of air quality standards through variances, extensions, or any other means.

The League feels that enforcement of air and water pollution controls should be carried out at the lower levels of government, but the federal government should have ultimate power to enforce standards if the lower levels do not meet this responsibility, and that there should be regulation of stationary sources by controls and penalties, including inspection and monitoring, full disclosure of pollution data, and substantial fines. We believe that pollution control should primarily be considered a cost of doing business.

In the area of land use, the League believes that the following goals should be kept in the forefront when guiding and directing the planning and management of land:

--identification and regulation of areas of critical concern, such as fragile lands where development could result in irreversible damage (shore lands of rivers, lakes and streams, wetland); renewable resource lands, where development could result in loss of productivity, such as significant agricultural and grazing lands;

--relate use of land to its inherent characteristics and carrying capacities;

--assure consideration of human needs; social, environmental and economic;

--incorporate conservation and wise use of energy and other basic resources into planning and management of land;

--protect private property rights and values in accordance with overall consideration of the public health, safety and welfare;

--require reclamation of lands damaged by such activities as construction;

--maintain and improve the quality of existing communities;

--insure public access to unique recreational areas, with due regard for carrying capacity.

The major responsibility for solid waste management should remain with the state and local governments, but the federal government should establish policies and programs to increase the demand for secondary materials, to encourage recycling of post industrial wastes.

To increase demand for secondary materials we feel that it is necessary for the federal government to equalize tax treatment for virgin and secondary materials by such methods as reduction of tax exemptions for extractive industries and increase tax exemptions for secondary materials industries.

The government should offer tax benefits to companies which install equipment that allows use of recyclable materials. For construction of these facilities, industry should invest private capital. Users should pay fees according to the amount of waste generated.

Energy conservation must be considered. Implementation of energy conservation must take full account of economic considerations and also give full consideration to the environment.

--the burden of energy conservation should be equally shared by all users -- residential, commercial, industrial, and transportation;

--waste reduction and resource recovery should be encouraged;

--the non-reducible portion of the waste stream should be recovered whenever possible to materials and energy;

--energy systems in the industrial sector should be designed to utilize waste heat;

--use of private automobiles for commuting (except for car-pooling) should be discouraged and alternate public transportation, such as light rail transit, buses and van-pooling, should be encouraged;

--states should be encouraged to allocate highway funds for mass transit facilities.

We, the League of Women Voters of Ashtabula and Erie Counties, urge that the Environmental Impact Statement address itself to the effect of the proposed U. S. Steel Plant in our area and its ultimate impact on Lake Erie, the surrounding creeks and streams, on the air within a fifty-mile radius, on the land itself in the two counties of the two states involved.

LWV-1 Whatever the issue, the League believes that there must be well defined channels for citizens' input and sufficient time for review.

LWV-2 We also urge that there will be a thorough review of the alternatives where there are detrimental aspects in reality. We urge that the long-term impact be weighed heavily.

Mark Montefiori
1009 West 36th Street
Erie, Pennsylvania 16508

September 5, 1978

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, N.Y. 14207

Colonel Ludwig:

Enclosed is a map of Presque Isle State Park and pictures, which I personally took. It is my hope that the graphic illustrations will help you to better understand my concerns for the park. You may keep the pictures.

As you probably already know, many places throughout the world are known for different things which makes them famous and distinct from all other places. For example, when one mentions Paris, what may come at once to the listener's mind is its long reputation for fashions; Denver, Colorado brings thoughts of ski slopes and a fabulous ski resort. Pittsburgh is widely referred as the "Steel City." Not as widely known perhaps as Paris, Denver or Pittsburgh, North East is, nevertheless, widely known to people of this region for its fine vineyards. And when Erie, Pennsylvania is mentioned Presque Isle is what almost always comes to one's mind.

Presque Isle is the most attractive feature in Erie. Erie is known as a tourist center. Every summer, between the time the park officially opens on Memorial Day weekend to when it closes on Labor Day weekend, nearly 2½ million people visit the park. As an employee for the past two summers I can very easily say that 8 out of 10 people are from out of town and as far away as Japan. The tourist trade results in a multimillion dollar profit maker for Erie businesses.

Not only is it important to us economically but as you can very easily see from the pictures it is important to us aesthetically. Out of the 92 other state parks in Pennsylvania, Presque Isle is the largest and by far the most visited.

Now that I have familiarized you with Presque Isle I would like to

comment on the detrimental effects the plant would have on the park.

Included in this letter is a map of Presque Isle. As you can see from the scale, the island protrudes about 2 miles into Lake Erie. This is significant because the discharge pipe from the proposed plant will be discharging waste at 1½ miles from shore only 20 miles up current from Presque Isle. According to the EIS and a map of the Lake currents, which I received from the Erie County Dept. of Health, the discharge flow would inevitably run parallel with the shore. As the EIS states in 4-634:

> The prevailing flow is ENE towards Presque Isle. Observed currents flow in this direction over 40% of the time, and suspended sediments are known to be transported in this direction.
>
> Dissolved constituents of the effluent will generally be carried by lake currents past Presque Isle and into the Lake Erie eastern basin. In the passage between Long Point and Presque Isle near-shore currents are predominantly easterly. . . Since bottom currents in the nearshore zone are generally ENE, it is expected that suspended material will eventually be deposited along the south shore (generally to the east of the proposed site).

MM-1 Presque Isle is, therefore, going to catch all the waste like a giant arm along its beaches. Furthermore, ammonia concentrations would be .94 mg/l over the EPA criterion of 0.02, with a worst case concentration going as high as 2.9 mg/l over the EPA standards. A very serious problem due to the fluctuation from low to high concentration levels.

MM-2 Another area of concern is that of thermal impact on Lake Erie waters. As you can very easily see from the black and white pictures, Presque Isle is protected during the winter months from erosion due to ice formation. The EIS says that the wastewater effluent would increase water temperature anywhere from 6 to 19°c, 4-639. As stated in 4-642, initial freezup would be delayed. With the severe storms we experience during the winter this could have a very profound effect on erosion. As you can tell from pictures of Budny beach, much has been done to help slow down erosion by means of breakwaters and land fills. However, these are not very permanent solutions to our problem and the steel plant would only create more erosion problems.

MM-3 Another area of concern lies with possible abnormal events during plant operation, 4-638:

> Failure of neutralization system, leaks or spills from chemical storage areas or modes of transport, and power failure. One of the worst abnormal events on surface water impacts, would be a complete power failure at the plant.

The obvious effect would be untreated wastewater being discharged into Lake Erie. These are conceivable problems which could occure.

In light of the above problems I have several solutions: (1) Don't issue the permit for the plant. It doesnt belong at the proposed site, (2) U.S. Steel should have self contained water storage MM-4 tanks for their needs instead of polluting Lake Erie, (3) U.S. Steel should build their discharge pipe farther out into the lake MM-5 basin where the discharge would not interfere with the waters off Presque Isle.

In 1970, the President, after signing the National Environmental Policy Act, states:

> the 1970's absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters and our living environment. IT IS LITERALLY NOW OR NEVER.

Someone has to stand up and defend our environment. Building the worlds largest steel plant 20 miles up current and upwind from one of the most beautiful parks in the nation is absolutely absurd.

It's a crime against the people who enjoy it, a crime against nature, and a crime against God.

Sincerely,

Mark Montefiori

Mark Montefiori

cc: Mayor Lou Tullio, City of Erie
Governor Milton Shapp, Penna.
President Jimmy Carter

MANUFACTURERS ASSOCIATION OF ERIE

Organized 1906 · Incorporated 1916

5 West Tenth Street · Erie, Pennsylvania 16501

Telephone 814/ 455-4454

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Vice President
Personnel and Community Relations
Lord Corporation Inc

September 7, 1978

Daniel D. Ludwig, P.E. Colonel
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

There are several items that the Manufacturers Association of Erie (M.A.E.) requests be reviewed and responded to on the Final Environmental Impact Statement. A duplicate copy of this letter has been sent to U. S. Steel Corporation. The Manufacturers Association is an organization of over 1500 private enterprise firms located in 17 Northwestern Pennsylvania counties.

Due to the magnitude of the Draft Environmental Impact Statement (D.E.I.S.) on the proposed United States Steel construction project, a document which is comprised of four volumes and about thirty-five hundred pages, our organization deemed it necessary to seek professional assistance in reviewing and analyzing the potential impact of the proposed project on existing industry. We had two major reasons for conducting the study: first, to provide data necessary for the development of a coping strategy, and second, to be capable of providing detailed comment on the D.E.I.S. Late last May, the Association retained Battelle Memorial Institute, Columbus Laboratories to conduct such a study and a team of scientists, engineers and supporting specialists were assigned to this project. Working in concert with the Battelle team was an M.A.E. committee consisting of top executives of key member companies.

The primary focus of our research has been an analysis of manpower impacts especially with respect to skilled and semi-skilled labor. Solid wastes, energy and air pollution impacts were also evaluated. Geographically, the research was concerned with an analysis of impacts upon industries within the jurisdiction of the M.A.E. Particular emphasis was placed on Erie County industries.

Generally, it is the opinion of the Battelle research team that the overall methodologies employed by the D.E.I.S. to estimate manpower, solid waste, energy and air pollutant impacts are quite appropriate and consistent with accepted principles of environmental assessment. However, there are a few topics that are insufficiently covered in the document which are in need of further consideration:

I. Since information concerning detailed occupational requirements was unavailable from the D.E.I.S., or directly from U. S. Steel Corporation, it was necessary for the Association's consultant to prepare estimates of manpower requirements for the steel mill by occupational breakdown. From this point the analysis involved the following steps:

A. A comparison and categorization of steel mill occupational needs against the profile of the Erie industrial labor market.

B. An estimate of demand by occupation for Erie.

C. An analysis of the potential supply by occupation from Erie.

D. An estimate of potential occupational impact.

MAE-1 As we stated in our preliminary comment to the Corps on August 22, 1978, the overall analysis reveals that the steel mill would magnify an already critical shortage of skilled and semi-skilled workers in Erie and Crawford counties as well as create additional pressures on wage rates. Battelle's analysis of the D.E.I.S. data estimates that roughly one third of the proposed mill's skilled and semi-skilled workers will come from the primary impact area of Ashtabula, Crawford and Erie counties. Based on this estimate, Battelle projects 2,364 of these workers will come from the Erie area. The effect of an additional demand of 2,364 skilled and semi-skilled workers, in the face of an already identified short and long range skilled worker shortage, could critically handicap manufacturing operations of existing industry.

MAE-2 It is quite clear that manufacturing establishments employing certain occupations will have a difficult time securing and/or maintaining needed manpower. For example, one occupation that could be particularly adversely affected is millwrights. It is estimated that the new mill would attract from the Erie area as many as one third of the currently employed individuals in this occupation. Other occupations which could be severely impacted are trades helper, instrument maker, oiler, pipe fitter and heat treater, and approximately 30 other job classifications identified by Battelle.

MAE-3 It should be pointed out that the D.E.I.S. analysis assumes that the facility is one of capacity expansion in nature rather than replacement. Given the degree of obsolescence of many existing steel plant facilities and the historic pattern of over capacity in the industry, there is good reason to question this assumption. If the assumption is wrong then secondary impacts of the proposed mill would be greater due to a higher rate in-migration. On the other hand, such a case would, to some extent, reduce the anticipated drain on the local labor market. We request that the Corps confirm this assumption and if necessary provide more detail and alternative scenarios. The experience of Erie industry suggests that movement of hourly workers to the Erie area is minimal even with an extensive recruitment effort. The E.I.S. analysis should address this problem.

MAE-4 In addition, it is important to existing industries in the development of coping strategies to obtain from U. S. Steel a detailed occupational analysis of the proposed mill at the earliest date in order to verify the data constructed in-house by Battelle.

It should also be noted that the M.A.E. has been encouraged by statements made by U. S. Steel officials. At an informal meeting held in Pittsburgh

on April 28, 1977, and a follow-up meeting in Erie on July 22, 1977, the company indicated a willingness, at the appropriate time, to cooperate with Erie area employers through financial and other means in an effort to increase skilled manpower training output in the region.

MAE-5 II. Solid waste impacts appear to be accurate, but only if the D.E.I.S. assumption that 96% of the mill's solid wastes will be recovered is valid. The D.E.I.S. assumed expansion of the Lakeview Landfill must also be valid in order that secondary growth impacts do not cause a solid waste disposal problem in the area. Both of these assumption should be examined more critically. A. D. Little, consultants, have stated in personal conversations with M.A.E. representatives that U. S. Steel would like, if feasible, to place their solid wastes off company property. The final E.I.S. should comment on this option and its implications.

MAE-6 III. The analysis of air pollutant impacts in the D.E.I.S. study did not sufficiently address the effect of mill related pollutants upon the potential for expansion of existing industrial operations in the Erie air basin. Also, the probability that a coal-fired electric generating plant (Cobo #1) will be built in the area should be more adequately addressed. Particulate, sulphate and photochemical oxidant standards presently in effect or under consideration by the Pennsylvania Department of Environmental Resources and/or by the United States Environmental Protection Agency could place severe limitations on future expansion of existing area industry, even without the approval of the United States Steel project.

On behalf of the 1500 member firms of the Association, we would like to express our appreciation, in advance, to the Corps for giving its full and careful attention to the issues raised above. If there are any questions regarding M.A.E.'s data, position or concerns, we would be most anxious to respond.

Sincerely,

Alan J. McDonald
President

jt
cc: J. A. Jernigan, United States Steel Corporation

National Audubon Society
CENTRAL MIDWEST REGIONAL OFFICE
ELIZABETHTOWN MALL, SUITE 15, ELIZABETHTOWN, KENTUCKY 42701 (502) 765-6734

September 5, 1978

Colonel Daniel D. Ludwig
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The Regional Office welcomes the opportunity to comment on the Draft Environmental Impact Statement for the proposed U.S. Steel Plant at Conneaut, Ohio.

There are several areas where we feel the EIS does not adequately answer our questions about particular aspects of this project.

MAS-1 In reviewing the statement we paid close attention to future changes in air quality and water quality that would be due to the construction and completion of this project. It is to be noted that the EIS went into great detail as to the type and extent of air emissions and effluent discharges. However, the EIS does not really deal with the cumulative effects of these emissions and discharges. For example, to what extent will the water quality of Lake Erie change due to the combined impact of the organic chemicals, suspended solids, and increased temperatures, and what are the implications for aquatic life?

MAS-2 We have noted the planned diversion of Turkey Creek into Conneaut Creek, and the proposed filling of 33,000 feet of existing stream bed. The EIS did not give a clear picture as to the extent that the waters of Turkey Creek will be modified by the diversion into Conneaut Creek. While the statement does discuss the existing water quality of Turkey Creek, there is no indication as to the relative abundance or scarcity of streams similar in quality, and the value of Turkey Creek as a tributary of Lake Erie.

MAS-3 We had hoped to find the subject of mitigation covered more fully. In considering the diversion of Turkey Creek we feel it is necessary to consider the loss of the creek and the associated habitat, the value of the fisheries, and the effect on the water quality and aquatic life of Lake Erie.

Sincerely,

Marshal T. Case
Regional Representative

AMERICANS COMMITTED TO CONSERVATION

NORTHWEST PENNSYLVANIA
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EDMUND FINCCANE, Treasurer
GLYNN J. KNIGHT, Executive Director

September 11, 1978

Colonel Daniel D. Ludwig
District Engineer
Corps of Engineers
Department of the Army
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

RE: Draft Environmental Impact Statement
On the Proposed U. S. Steel Corporation
Lakefront Steel Plant

Attached to this letter are comments that the Northwest Pennsylvania Regional Planning and Development Commission received from Health Systems Incorporated of Northwest Pennsylvania and the Northwest Regional Planning Council of the Governor's Justice Commission on the above referenced document. The comments are self-explanatory but I am sure you will note the concerns expressed by these two agencies regarding certain aspects of the DEIS.

For your review and evaluation, I have also enclosed a copy of the Commission's Areawide Action Program which identifies regional goals and objectives in specific functional areas. With regard to the proposed Steel Plant facility, I would call your attention to Chapter 5: Functional Area Goals and Objectives, Sections on Industrial Development, Recreation, Water Quality, Highways and Housing.

The Northwest Commission generally agrees with the response to the DEIS made by the Northwest Pennsylvania Futures Committee, Incorporated at the last public hearing. The issues identified in the response clearly point out the difficulties in agreeing with the social and economic impacts that the proposed steel plant facility will have on Erie and Crawford Counties as identified in the Draft Statement.

Hopefully, your office will see that the social and economic considerations are resolved, as well as the related comments concerning health care and law enforcement, before the final EIS is prepared.

Sincerely yours,

Glynn J. Knight
Executive Director

GJK/daj
Enclosures

HEALTH SYSTEMS, INC. STAFF REPORT ON

U.S. STEEL IMPACT STATEMENT ON HEALTH

(July 25, 1978)

General Introduction

The Environmental Impact Study (E.I.S.) prepared for United States Steel Corporation by Arthur D. Little Co. concludes that the health care industry in the Pennsylvania communities of the Principal and Regional Study Area will only be impacted minimally, if at all, as a result of the influx of new population. Health Systems, Incorporated (HSI) analysis of this study indicates that there could be an impact on the health care institutions in Erie County, but that with minimal adjustments, these impacts can be handled smoothly and without the need for excessive construction programs.

HPR-1 The health component of the E.I.S. is very conservative preferring to advocate the continuation of the present traditional ...ce of health care as opposed to the consideration of new ideas which could improve the delivery of medical services in view of the increased projected populations. Such concepts as emergency medical systems, group practices, HMO's, levels of hospital care, referral patterns and home health care are not discussed.

HPR-2 The population projections by A.D. Little appear to be very low according to the Pennsylvania Office of Planning and the Erie and Crawford County Planning Commissions. A.D. Little projects new population increases of 7,880 by 1981, 14,235 by 1986 and 15,810 by 1990. The consultants indicate that this final figure of 15,810 represents the total population impact in this area including both primary and secondary impact. That is, populations generated directly and indirectly by the presence of the steel mill. The state of Pennsylvania estimates that the total population increase for Erie, Crawford and Ashtabula will be closer to 37,000 people by 1990.

HPR-3 The study states that Brown Memorial Hospital (BMH, and Ashtabula Hospital (AH) should be the focus for primary care services in Ashtabula County. HSI believes that such community hospitals should be the focus for a secondary level of care. Primary care should be encouraged through development and expansion of primary care centers, physician group practices and the consideration of an HMO supported by U.S. Steel Corporation. The tertiary level of care then should have been addressed and identified through such developed facilities as St. Vincent Health Center and Hamot Medical Center in Erie which are in close geographic location to the principal study area and which already services a percentage of population from the Springfield, Pennsylvania and Conneaut-Ashtabula, Ohio areas.

The question of the location of residents in Erie vs Ashtabula counties is lacking specific answers. The magnitude of the population and the place of residence will determine the impact and demand for services. A.D. Little Co. has stated verbally that 60% of the population will reside in Ashtabula County and 40% in Erie County and of the 40 % in Erie County, [illegible] of the population will settle north of I-90. This is, at best, a guess. Housing units are not in plentiful supply in either county in the areas projected to be developed. Initially, the construction workers could reside in the Erie Metroplitan area, Corry, Wattsburg or Union City where some housing is available, therefore the initial demand for health services could be on Erie County

NPR-4 facilities. The final settlement of the new mill work force will alternately decide where these people will seek services. If we were to utilize the state population projections and the consultants' ratio of 60% Ohio and 40% Pennsylvania residences then approximately 14,800 new residents will relocate to Erie and Crawford and 22,200 in Ashtabula and surrounding Ohio communities. No information is available indicating, from this figure, the percentage of population settlements in Erie vs Crawford County, but it is generally believed that a large majority will opt for Erie County. The Pennsylvania State Office of Planning and Development has projected a normal growth of 19,400 between 1975 and 1990 for Erie County. Adding the steel related increases will present a possible new Erie County population growth of 34,000 by the year 1990.

The population increase may be greater than 30,000 and the ratio of 60% Ohio and 40% Pennsylvania settlement may be erroneous if one accepts the premise that the local area does not have the necessary skilled labor for steel mill production and most of the skilled labor will originate from urban areas in the tri-state area including Pittsburgh, Pennsylvania and Youngstown and

NPR-5 Cleveland, Ohio where such trained individuals may currently reside. The pattern and preferences for urban vs rural life and the pattern and preferences for health care which this new population will bring may have already been established. These urban-oriented individuals may, in fact, prefer health services in the larger metropolitan and may, in fact, be more willing to seek larger group practices, prepaid health care programs and specialty health care.

NPR-6 In terms of future residences, these people may be more attracted to the large urban areas due to the presence of large shopping centers, recreational, sports and culture facilities.

Hospitals

The E.I.S. states that the new population would be divided 75%-25% between the two (2) Ohio hospital facilities. HSI does not

NPR-7 believe this to be a correct statement.

Patient origin data is not readily available, but provisional information indicates that approximately 2.2% of St. Vincents Health Center admissions are Ohio residents (presumably, mostly Conneaut-Ashtabula area); 2.5% of Hamot Medical Center; and about 1% of Doctors Osteopathic Hospital. If computed for the year 1977, this would equal 1,030 patients or about 23 Erie County beds utilized at 100% occupancy or 27 beds at the federally recommended level of 80% occupancy. Therefore, it is estimated that about [illegible] of the Ohio patients in the principle study area are admitted to Erie Hospitals and therefore, not 100% of the new population will likely utilize only the Ohio facilities. This is based on past utilization patterns as we stated before based on a premise that the incoming skilled labor may gravitate more to urban health facilities for care.

While we are saying that the impact of numbers of people for health services in Erie could be greater than the E.I.S. estimates, our basic conclusion also is that the Erie facilities can handle this increase without the need for physical expansion at least through 1990. Erie County is overbedded for Acute Care, including a surplus of 83 Medical-Surgical, 17 Pediatrics and 25 OB/GYN for a total of 125 surplus acute care beds.

Based on recent State of Pennsylvania projections, Erie had a ratio of 5.73 beds/1000 population in 1975 and will have ratios of 6.14 in 1980; 5.97 in 1985 and 5.85 in 1990 unless HSI can impact more heavily on bed reduction programs and joint hospital planning. These ratios are well above the federal mandate of

NPR-8 4.0 beds/1000 population.

If the total new population by 1990 for Erie County reaches only the lowest projected levels according to A.D. Little Co., i.e. 19,400 (normal baseline projections) plus 6,320 (40% of 15,800) for a total of 25,720, this would generate the usage of approximately 101 acute care beds based on the average recommended usage rate of 4 beds/1000 population. These 101 beds are well within the current surplus of 125 beds. If the maximum projected population is reached according to state projections, i.e. 19,400 (normal baseline projections) plus 14,800 (40% of 37,000) for a total of 34,200, then this would generate a usage of 136 beds which is still in close proximity to the number of surplus beds. This difference of only 11 beds will be offset by increased emphasis on utilization review and outpatient services and by the fact that this new population being younger in age will, in fact, probably not need beds at the rate of 4 per 1000.

A.D. Little Co. projects bed increases and hospital construction for the two (2) Ohio facilities based on a bed ratio of 4.7 beds/1000 population which is the current ratio in the study area. It

NPR-9 is unrealistic to project bed need based on this ratio again because of the federal regulation's requiring a health planning goal of 4 beds/1000 population which means health facilities must provide better utilization and/or provide alternative methods to inpatient care.

It is also unrealistic because the incoming population will be younger in age requiring much less hospitalization than if the new influx were elderly.

The overall occupancy rates of Brown Memorial Hospital (BMH) (73.1%) and Ashtabula Hospital (AH) (60.1% does not suggest a need for bed expansion and construction programs based on a maximum ten (10) year Ohio population expansion 2,220 (60% x
NPR-10 15,800) people plus normal baseline projections especially when the final location of residence and the preferred referral and usage patterns for medical care are not known. Again, the consultants were conservative by recommending the traditional mode of construction instead of advancing new modes of health care and management which will better utilize current physical plants.

Long Term Care (LTC)

Current studies and projections of LTC bed needs in Erie County indicate that additional beds may still be needed to meet present service demands through 1983. There are 1,631 skilled nursing
NPR-11 and intensive care beds available in the county with 115 new beds approved for construction. Approximately 272 more beds may be needed by 1983.

Since the majority of new residents are not expected to be elderly, the current LTC bed assessment is presumed to be sufficient, at least for the next five (5) years.

Health Manpower

HSI agrees that most health manpower in this area is not in ample supply. Physicians generally are plentiful if one considers Erie County as a whole with a physician population ratio of 1:831. However, 85% of the 326 Erie County physicians practice in the city of Erie and 90.1% practice in the greater Erie metropolitan area leaving a 9.9% in rural Erie County. Thus, the problem is one of physician maldistribution as it is in most of the U.S.

Primary Care physicians, both M.D.'s and D.O.'s, currently number about 148 with a ratio of 1:1918 most of whom practice in the greater Erie area. The recommended norm is 1:2000 which Erie County, as a whole, has achieved. The two major allopathic hospi-
NPR-12 tals in Erie have instituted family practice residency programs. Hamot Medical Center has 18 positions with the first class graduating in 1977. Saint Vincent Health Center has 14 positions and will begin graduating M.D.'s in 1979. By the early 1980's, at least 10 to 12 primary care physicians per year will be completing these programs. Based on a national average of 50% retention rate in the general location of the residing programs, five and six new primary care physicians should be available in Erie County each year. Assuming that the maximum population growth of 34,000 people occurs in Erie County by 1990 then an additional 17 primary care physicians are required to maintain the current ratio of physicians to population at 1:2000. This goal then is reachable in the mid 1980's, assuming that the attrition rate of present primary care physicians is low. Recruitment activities which are also ongoing could accelerate this timetable. Additionally, Doctors and Erie Osteopathic Hospitals have yearly interns and residents, many of whom remain in the area. Gannon College also has a six (6) year physician program in conjunction with Pennsylvania Medical School which emphasizes the encouragement and retention of area students.

In conclusion, the primary care physician shortage has a reasonable chance to be solved in Erie County. However, this influx and retention of new physicians may not guarantee that these individuals will reside and practice in rural Erie County. Proper orientation of residents in the various hospitals and medical programs to the needs of rural Americans would be a positive factor. Economic inducement may also be present because there will be new concentration of population in the outlying areas whose incomes will probably be above those of current residents and who will probably be well-insured through various third-party reimbursers. There will also be a low number of medical assistance patients. The successful encouragement of the development of larger group practices in the outlying areas such as the Asper Medical Clinic will go a long way toward solving this problem.

The number of full-time practicing dentists in Erie County in 1977 was 144 for a dentists to population ratio of 1:1887. National surveys indicate that the mean number of patients served per dentist was 1,485. In any population, it is expected that 40% of people will seek periodic care for completion of dental problems requiring a dentist to population of 1:1000 and that 30% will seek some care (emergencies) requiring a ratio of 1:5000 and 30% virtually no care at all requiring a ratio of 1:6000. The overall Erie ratio of dentists to population is not adequate if we are to consider the figure of 1,485 to a guideline and means that the present dental force cannot handle an increase in population. Dentists are a little better distributed in the county than physicians, although 79.2% still practice in the greater Erie area. The increase in population in the county due to normal growth and the new plant will create a further need for additional dentists. Most of these new residents, it is suspected, will have the economic means to seek dental care. Using the suggested ratios mentioned above with a maximum population increase of 34,000 people would require approximately 23 new dentists to be located throughout Erie County. This then represents an area of concern which HSI and the community must focus its attention.

Other Considerations

The E.I.S. does not address the question of the possible negative
NPR-13 impact on the health of the current residents in the principal impact area. Since the income levels for the plant related residents should be significantly higher than the current residents, how will this affect the economics of people on a low or fixed income in terms of their ability to purchase or to access necessary medical care?

NPR-14 Another issue not addressed in the E.I.S. is the concept of Emergency Medical Services and the plan, if any, to establish a system of quick access to emergency personnel and services. A plant of this magnitude will, of course, mean a tremendous amount of both road and rail traffic. Will the design of the plant consider roadways and oil residential areas which are unobstructed by rail lines to prevent delays in the dispatch of emergency vehicles? Will a safe traffic pattern be designed which will keep heavy traffic away from residential areas to reduce accidents and injuries? Will a coordinated EMS system be developed between authorities in both states for mutual responses and assistance without regard for state boundaries?

Summary Conclusions

NPR-15 1. HSI believes that there will be a larger impact on the Pennsylvania side of the plant development particularly in terms of Erie area health facilities than the E.I.S. projects.

NPR-16 2. Erie health facilities and services generally will be able to handle the new medical demands without need for capital expenditure.

NPR-17 3. The new residents, in form of skilled laborers, may gravitate more to Erie area for services and residences because of a possible preference for urban conditions based on pre-formed habits if a concerted effort is made by Pennsylvania State and County governments and private enterprise to provide additional housing units.

NPR-18 4. The health component of the E.I.S. is basically a conservative and traditional evaluation of the impact of andneed for medical care in the principal study area. Health planning concepts and guidelines such as beds per 1000 population, levels of medical care, group practices, primary care centers and HMO development are omitted.

NPR-19 5. 100% of the new population will not be divided solely between Brown Memorial Hospital and Ashtabula Hospital as stated since Erie facilities already service 7% or more of current residents.

NPR-20 6. The projected need for 17 additional primary care physicians for Erie County by 1990 can be expected to be achieved by the mid to late 1980's.

NPR-21 7. The current long term care bed need projections for Erie County will not be affected by the construction of the steel mill.

NPR-22 8. The number of new dentists needed for the maximum population increases by 1990 will be at least 23 for Erie County and represents a major area of concern for HSI.

NPR-23 9. The impact on the health of current residents of the principal study area is not discussed.

NPR-24 10. Environmental planning in terms of community safety and welfare and emergency medical services is not discussed.

CRAWFORD COUNTY HEALTH ADVISORY COUNCIL

MEMBER OF HEALTH SYSTEMS INCORPORATED

PROVIDERS

CONSUMERS

443 Byllesby Avenue
Meadville, Pa. 16335
August 30, 1978

Mr. Glynn Knight, Director
NWPRPDC
Suite 406 - Biery Building
Franklin, Pennsylvania 16323

RECEIVED

Per

Dear Glynn:

Enclosed is a letter I wrote Jerry Farmer when I received his draft DEIS review statement. Let me summarize very briefly what I see the health service impacts on Crawford as being if in fact my "scenario" is more accurate than A. D. Little's.

The western part of our county is in fact medically underserved at the existing population level. Primary care (def: personal physician, routine health maintenance procedures) are available in Conneautville in a Sears-built clinic which is part-time physician staffed with physician extenders full time and has limited emergency capability. The program for this facility is overseen by Community Health Services Inc. John Wallach Director.

Linesville has a foreign born physician in place and Conneaut Lake has a group practice, currently of two foreign born physicians, in place.

Acute Care (Hospital service) for the area is available either at Meadville or Greenville or in Warren, Ohio. Erie offers mostly referals and tertiary care services to this area. Fairly extensive Emergency Medical Service Teams cover the County so this does not seem to be a potential problem service.

Dental services are available in Meadville, Erie County, Andover, Ohio and Greenville and reportedly a new practice has opened in Conneaut Lake.

It should be noted that the 6,000,000 or so day visitors per year at Pymatuning State Park make use of these same community health services and pose an additional strain on already finely stretched commitments, especially in the area of emergency needs. Conneaut Lake with its summer population and its amusement park (which draws heavily from Eastern Ohio as well as Pittsburgh, has an additional potential overload for the health system.

Community Health Services offers an extensive program of Home Health Services and the County office for the Aging coordinates a wide variety of medical and social support services, all of which reach out with Crawford's defined impact area.

I cannot tell you what efforts the Conneaut School district makes in preventive or diagnostic health programs through their school nurses. This varies widely from district to district. Many county-wide programs (such as Drug & Alcohol, MH-MR, Family Planning, etc.) are in place and I do not have time at this point to investigate the impact of population increases on their programs; I assume they would be substantial.

I think it is a gross error to write off impacts on long term/geriatric/nursing facilities on the grounds that the incoming force is of working age. These people have parents and responsibilities which come with them. In this day increasingly we bring our elderly relatives to elderly housing or nursing homes near us, I think - ie. they must come to our source of income, we cannot go "home" again. Further in some predictable proportion to the population they will bring with them retarded, crippled, alcoholic, and mentally ill family members because such collateral responsibilities cannot be left behind. To assume that each mill employee will bring 2.6 healthy family members is to be blindly unrealistic.

NPR-25

I hope this gives you some idea of my concerns about the potential impacts on Health systems in Crawford. Unfortunately I assumed Jerry would cover us when he did Erie and never researched the problem as it deserves, so I cannot offer you statistics to answer the questions I have raised. However if I have indicated some of the areas where they are questions, perhaps that will start the process.

Best regards,

Anne W. Stewart

Anne W. Stewart
Chairman

ljm

Enc:

cc: Ed Edinger
Jerry Farmer
Bill Douglass

GOVERNOR'S JUSTICE COMMISSION
COMMONWEALTH OF PENNSYLVANIA
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NORTHWEST
REGIONAL COUNCIL

Dr. William P. Garvey
Council Chairman

August 21, 1978

RECEIVED
AUG 23 1978
REG. PLANNING
Per

Mr. William R. Steiner
Assistant Executive Director
Northwest Pennsylvania Regional
Planning and Development Commission
Suite 406, Biery Building
Franklin, Pennsylvania 16323

Dear Mr. Steiner:

In response to your correspondence of June 13, 1978, the Northwest Regional Planning Council staff have reviewed the report of the proposed U.S. Steel Plant and the anticipated impact on law enforcement within the Principal Study Area in Pennsylvania. There were many conclusions drawn with which the staff were in agreement. However, there were geographic areas in which we felt the anticipated impact was underestimated, such as Springfield Township. Our comments are as follows:

Page VI, Paragraph 10 (Springfield Township)

Upon completion of the U.S. Steel construction operation, the corporation will employ over 1,300 employees. This increased population can be expected to directly relate to additional population increases and additional employment. It is also probable that commercial establishments along Route 20 could double over the present commercial activity. Taking these two additional factors into consideration, the present population of Springfield Township could more than double by 1990.

NPR-26

Page 2-282 (2.211) Consistent with our records.

Page 2-283 (2.213) Our records indicate that Girard Borough provides 24-hour police service.

NPR-27

Page 2-286 (2.215) Consistent with our records.

Counties Represented By Northwest Regional Council

CAMERON - - CLARION - - CLEARFIELD - - CRAWFORD - - ELK
ERIE - - FOREST - - JEFFERSON - - LAWRENCE - - McKEAN
MERCER - - POTTER - - VENANGO - - WARREN

Page 2-287 (2.217) Consistent with our records.

NPR-28 Page 2-290 (2.219) We have no record of Pennsylvania State Police equipment.

NPR-29 Page 2-292 (2.221) Our records indicate that the Erie Police Department also has a mobile crime van, 14 motorcycles, a dog law enforcement van, a prisoner van, and that Millcreek Police Department has two motorcycles, a dog enforcement truck and a tactical van.

Page 2-292 (2.223) Consistent with our information.

NPR-30 Page 2-294 (2.225) Our office does not maintain budget information on municipalities.

NPR-31 Page 2-295 (2.228) Citizens band radio communications is definitely not a preferred method of radio communications among police personnel. Utilizing citizen band in the Springfield area would virtually isolate such local police from area law enforcement agencies, as they would be on police frequencies.

NPR-32 McKean Borough does not provide broad-based law enforcement services. The law enforcement services provided by McKean Borough are limited to issuing moving traffic violation citations and parking citations.

NPR-33 The feasibility of contracting for police services is generally dependent upon the availability of full-time police protection by an adjacent community. Staff experience in this area indicates that extensive study of the respective crime rates, local financial resources, and government support is necessary.

NPR-34 All police officers are required to attend the 480 hour Basic Municipal Police Course. This law was passed in 1974, and was a long overdue effort to professionalize law enforcement in Pennsylvania. Although part-time departments are recognized as law enforcement service providers and bound by this law, such departments provide limited services and generally pay their officers less requiring them to hold another full-time job. This restricts the officers availability during off-duty hours and severely limits their availability to attend necessary in-service training courses. In addition, part-time departments are not eligible for funding assistance through the Governor's Justice Commission.

NPR-35 The hours that the plant will be operating during construction and upon completion as well as the number of employees during such times would need to be taken into consideration, in addition to the ratio of police personnel to the general population.

NPR-36 Five (5) officers are required to provide twenty-four (24) hour service seven (7) days a week. Where some specialization will be required for criminal investigation, juvenile work, and administration, two (2) additional officers will be required. Therefore, seven full-time officers may be required by 1990.

Page 2-297 (2.230) Conclusion acceptable.

NPR-37 Page 2-298 (2.233) The $35,000 figure for two (2) officers may be low as salary and benefits for these officers could be $13,000 - 16,000 apiece, at least $6,500 for a fully equipped marked vehicle, plus portable and mobile radio communications equipment, and a certain charge for radio dispatch services.

NPR-38 Page 2-300 (2.335) Girard Borough police expenditures seem to be underestimated.

Page 4-179 (4.145) Refer to 2.228.

Page 4-179 (4.149) Consistent with our records.

NPR-39 Page 5-5 (5.12) Our position on part-time personnel has already been stated, but we would emphasize that a municipality hiring part-time officers must still meet the current police training standards.

If you have any questions on these comments, please contact me.

Sincerely,

Eileen M. Crerand

Eileen M. Crerand
Planning Director

RESPONSE BY THE

NORTHWEST PENNSYLVANIA FUTURES COMMITTEE, INC.

to the

DRAFT ENVIRONMENTAL IMPACT STATEMENT (D.E.I.S.)

PROPOSED LAKE FRONT STEEL MILL

WEST SPRINGFIELD, PENNSYLVANIA / CONNEAUT, OHIO

The issues and concerns of the Futures Committee with respect to the Draft Environmental Impact Statement for the proposed U.S. Steel Plant can be summarized with three questions:

1) Would the proposed Steel Mill result in any impact which would so degrade the Region's natural environment, or so overwhelm its structure that the Region's quality of life would be permanently and unreasonably reduced?

2) What is the extent and nature of the public and private response required to accommodate growth and minimize adverse impacts?

3) How may the impact statement be used by appropriate agencies to best direct the efforts and harness the investments, both public and private, so as to improve the livability of affected communities?

With respect to the first question, the review of the D.E.I.S. resulted in a generally favorable position by the Futures Committee with respect to the proposed Steel Mill. The installation of the facility could in the judgment of the Futures Committee have a beneficial effect on the Region by expanding income, increasing employment opportunities, adding vigor to the economic vitality of the area, and creating an opportunity to regenerate declining communities in the Region.

The other two questions were not answered favorably. A critical review of the impact statement leads us to the unavoidable conclusions that the size and geographic extent of impact related growth is underestimated, that the statement of secondary impact does not adequately prepare local communities and appropriate agencies to meet the challenge and to harness the opportunities of coming growth, and that the D.E.I.S. may in fact aggravate the problems of obtaining investment adequate to meet the needs of foreseeable growth.

The dissatisfaction with the D.E.I.S. relates primarily to secondary impact assessments. The D.E.I.S. underestimates the extent of new growth, the extent of induced and indirect activity, and underestimates the geographic spread and impact of new growth and economic activity resulting from the Plant.

The level of detail presented in the report is more specific than the generalized assumptions justify. Finally, the Impact Statement measures only that community growth which is directly attributable to the Plant. Detail presented in the report seems to suggest that such impact represents the total growth which must be accommodated by the communities. When this impact is added to the baseline growth projections, any interaction between the two can be expected to aggravate housing shortages, social problems and the like.

EXTENT OF NEW GROWTH

The Impact Statement concludes that the Steel Mill will directly employ 8,457 people, indirectly employ over 900 and result in a total in-migrant population of only 15,810 persons. This modest figure is based on the conclusion that only 4,435 families would be attracted to the area and that some of the remaining employment -- direct, indirect, and induced -- would be filled by a decrease in the unemployment level of the baseline labor force. This scenario indicates a drop in the unemployment rate of .7% below the baseline projection, or 1,680 jobs.

NWP - 1

Of the remaining job openings, 6,490 would be filled by "original residents" but -- aside from being residents of the area -- where do these "original residents" come from? They are added to the baseline labor force, but there is no apparent explanation of how they can be so added without also affecting the baseline population. The labor force might be increased without a change in total population if the rates of participation of population in the labor force were also increased, but the Impact Statement makes no mention of changes in

those ratios. They may be presently residents of the area who under baseline economic projections might be required to move elsewhere to seek employment if the U.S. Steel Plant were not available as a source of employment. Or they might be natives who have already immigrated but return once employment opportunities are made available by the U.S. Steel Project. In either of those latter cases they would constitute a growth factor that for projection purposes would provide the same growth impact as if they were in-migrants and not "original residents".

It cannot be inferred from the statistical presentation that "original residents" refers to a man presently employed in another job who will leave that job to take employment at the U.S. Steel facility. If this were intended, the size of the labor force would not increase correspondingly to the increase in the number of "original residents", and the baseline projection for employment would be decreased. Some employees
MP - 2 may indeed come from other jobs within the Region. This would not diminish the actual impact, however, since the job opportunity would remain at the company the worker departed. The hiring of someone for that job would result in the same growth impact as if an in-migrant had been hired by U.S. Steel directly. The prospect for such employment should indeed fuel the hopes of those attracted to the area for job opportunities.

To avoid confusion some clarification should be made between the terms "original residents" and "mover". In assessing secondary impact, we are truly most concerned with the increase in the number of people who
MP - 3 will be living in the area if the Plant is built over the number who would live in the area if it were not. To more accurately anticipate this, we should be concerned with the number of additional job opportunities related to the Plant, estimate the family size of these additional employed persons; and thereby arrive at the size and composition of population growth related to the Plant. Neither a reduction in

unemployment rates nor absorption of presently underemployed persons is expected to enter into the equation, since not all new persons attracted to the area will be fully employed. Underemployment sources -- chiefly agricultural workers -- have diminished to a point where few, if any, perspective employees can be counted on from these sources.

Growth Magnet

The low projection of migration is fortuitous with respect to minimizing secondary impacts from the proposed Mill. Convenient through that may be, it does not truly seem to be a reasonable scenario. A project of this
MP - 4 magnitude -- a Steel Mill of national significance requiring a peak of 10,000 workers to construct at a cost of over $3 billion and with operational employment in excess of 8,000 workers -- will act as a growth magnet for those in need of employment. Almost every other major construction project in the United States in the last ten years -- many of them smaller in magnitude than that proposed here -- has drawn people seeking a fresh start in a prospering area. They come whether or not they have the skills that are needed, whether or not specific jobs are offered, and -- sometimes -- whether or not they are in fact employable. They come even when extensive efforts are made -- as in Alaska -- to discourage them.

Within the past year the metropolitan areas of Youngstown, Ohio, Johnstown, Pennsylvania and Buffalo, New York have all suffered economic
MP -5 reversals and decline in employment in the Steel industry. It is a virtual certainty that out-migration from these areas will increase significantly, and that many of the movers will be experienced steelworkers. And it seems unavoidable that many of these workers would be attracted to the impact area whether or not they were promised jobs.

In New Stanton, Pennsylvania when the employment offices were opened
MP -6 for applications for the automobile assembly plant a phenomena occurred which might be termed "the return of the native". The media reported

that more than 5,000 applicants had formed a line on the first day with a surprisingly large number coming from relatively distant places. Their stories were similar: they were originally from the Region, but had moved to Long Island or Chicago, or Richmond for employment. Now they sought to leave their employment when an opportunity to return to their home community presented itself. The original impact area has been an area of out-migration for many decades, with the out-migration being caused primarily by lack of employment opportunities to accommodate all those entering the labor force. It seems probable that a repeat of this phenomena would occur both during the construction phase and the operational phase with the new Plant. Again, although these might be "original residents" their impact will be the same as any other in-migrant.

Postponement of Out-Migration

While out-migration has dropped in the principle impact area during the last decade, it is likely to decrease even further with the announcement of the construction of the new Steel Mill. Those people entering the labor force are likely to postpone out-migration and seek employment either in the new Steel Mill or in the favorable economic climate created by the Mill.

All of these factors seem highly likely. The scenario that only those who are needed for the construction or operation of the Steel Mill will be attracted to the area is unlikely, and there is no mechanism to assure that only those so needed will move into the area. Rather, those who perceive that they may be needed, or who hope to find opportunity in the invigorated economy will come. Not all will be successful in finding employment, and it is reasonable to assume that the unemployment level in the Regional Impact area will remain parallel to the national experience. In-migration resulting from the construction phase is also minimally stated and then dropped altogether because such employment

MP-7

is of a temporary nature, and after 1990 would not be related to the Steel Plant. Several factors are likely to increase the permanent effect of migration from construction workers.

First, if the Coho Generating Unit is built during the 1980's near Girard, the attendant requirement for construction manpower will interact with the requirements for U.S. Steel and a synergistic effect will almost certainly occur amplifying the total impact beyond the sum of the two projects if they do not occur at the same time.

Secondly, the total construction period will extend over a nine-year period, and even with fluctuating manpower requirements the time span is long enough so that many workers will put down permanent roots. Again, it is unlikely that the number of people attracted to the area will exactly equal those who are needed.

The D.E.I.S. contains extensive discussions of two factors which, it is suggested, would mitigate against in-migration: the announced U.S. Steel policy to preferentially hire local residents; and the operation of the local trade unions in giving first priority to local construction workers and then metering the in-migration of additional trade union members as necessary. The effectiveness of these two procedures in minimizing in-migration should not be overestimated. The first policy may in fact induce outsiders to establish residence in the area prior to applying for employment. In the second case, the procedure should ensure that the longest term employment goes to local residents and this might help to reduce the impact of in-migration. Peak manpower estimates show that the maximum number of employees during construction would reach 10,000. However, the actual number of men who will work on the Plant will be substantially greater. Construction schedules, particularly for the technologically advanced facilities such as is proposed, do not always go as smoothly as forecast. Delays from late shipment of supplies and material, from adverse weather or from other

MP-8

unexpected problems require increased manpower input at a later stage. Projects such as this entail a fair turnover of workers resulting from the firing of those who are unable or unwilling to perform as required than from workers leaving because they are tired commuting or unable to find adequate local housing. Out of this large number of men who are exposed to the Region, it is predictable that a fair number of them will find the area attractive as a permanent home and if they can find housing will bring their families into the Region. Nor will all of the workers be so highly skilled that they will be in demand for major projects in other parts of the country. Many of the unskilled or semi-skilled required by the project may seek and find alternative employment in the area at the conclusion of their construction work.

INDUCED AND INDIRECT EMPLOYMENT

The theory of community economic structure uses the concept of "basic" employment to describe those jobs that bring outside revenue into the community. Basic employment includes manufacturing, agriculture, mining, and resort activity. In simplistic terms, this basic activity provides a balance of payments by which the community can afford to import goods and services which are produced outside the area. While such concept is greatly simplified -- communities and regions have become very inter-

MP - 9 twined because of increased mobility for example -- yet the theory does provide a generalized guide as to the relationship of basic employment to "service" employment. Basic employment generally constitutes about 40% of total employment and this percentage has been moving downward. The long-term effect of 100 jobs in "basic" industries is to produce an additional 150 jobs in trade, finance, personal and professional services.

In the short run, the effect may be substantially less. A small increase of basic employment in a large regional economy may have little noticeable effect. The jobs for instance may be absorbed by

persons who are "underemployed" so that no change results in the population of the community. Those already providing services may be able to accommodate the increase through increasing their level of business. A barber, for example, may simply cut more heads of hair.

A time lag is usually associated with the provision of additional service employment also. An increase in local payrolls, for example, may result in a higher level of business activity and existing stores. The increased profits may in time attract new business ventures causing an increase in service employment.

MP -10 However, when a very large increase in basic employment occurs rapidly, the related growth in service industries will occur much more rapidly. A substantial, well-advertised and assured increase in employment and payroll is certain to attract the attention of the enterprisers in our society. A project requiring 10,000 construction workers and providing nearly that many permanent jobs is certain to expedite the rate at which service employment grows.

Furthermore, growth dynamics may escalate the extent of growth beyond the level estimated by prudent economic forecast. The presence of large numbers of people and sizeable payrolls may very well spawn enterprises which might otherwise go unformulated. New industries or service operations may very well be initiated in the area, even though they won't be needed by U.S. Steel, but rather because the presence of U.S. Steel and the impact on the population may be perceived by the industrialists as being sufficiently propitious to offset his earlier

MP -11 doubts. Housing projects built to meet the need of the new employees at the Steel Plant may very well find a latent market on the already short housing supply of the Region. The projected growth added to the baseline population may very well suggest to some enterprisers that the size of the Regional market has reached a point where it can support some highly specialized service. Such growth dynamics are difficult to predict, they are observable in other growth impacted areas,

particularly when spread over a ten-year time span. If the impact of such growth dynamics is difficult to measure in advance, knowledge of them should at least lead the prognosticator away from too conservative a projection of induced and indirect activity.

The D.E.I.S. is far too conservative in estimating the indirect and induced impacts. By assigning more than half of the projected employment to "original residents", it greatly underestimates the need for new housing construction and related infrastructure and services. It assumes relatively small impact from the construction force of 10,000 workers. The majority of these it has projected would be weeklies residing too far to commute daily, and not so far that they could not reach home on weekends. The "weeklies" would occupy lower cost transient quarters within the Region and the D.E.I.S. presents a tabulation of the number of units available for such transients and concludes that they can be accommodated without difficulty. But during the week of August 7th, 1978 — when impact from the Steel Mill was almost indiscernible — virtually all of the motel rooms in the City of Erie and Millcreek Township had been sold out. If the scenario for accommodating construction workers proposed by the D.E.I.S. becomes a reality, then it will either cause an extensive secondary impact in providing new or refurbished transient facilities, or it will displace the resort activity centered on Presque Isle throughout the construction stage. Direct and indirect employment forecasts for the facility total over 9,400 jobs (including subcontractor maintenance, slag operations, plant food service, and transportation). Indirect employment adds an additional 3,200 jobs for a total employment projection of 12,675. The multiplier expressing the relationship of induced employment (service employment) to direct and indirect employment (basic) utilizing these figures is calculated to be .348. That is, for each job at the Steel Mill or serving the Steel Mill, only one-third of the job is estimated by the D.E.I.S. to be required for all additional related activities. Put another way, three out of every four jobs projected to be related to the installation of the Steel Mill will be in basic employment. Moreover, this very small ratio presumably incorporates the accelerating effect resulting from the construction phase of the facility.

MWF-12

A more reasonable multiplier — using 1990 as a target date — would be 1.0. Given the difficulty of finding a paradigm that exactly corresponds to the Regional impact area, it would probably be prudent to qualify any such projection by indicating a range of probability. A reasonable variation in that multiplier might range from a low of .75 to a high of 1.25.

These multipliers would result in the following estimated total impact employment by 1990:

MWF-13

	LOW ESTIMATE	MIDDLE ESTIMATE	HIGH ESTIMATE
Direct and Indirect Employment	9,400	9,400	9,400
Multiplier	.75	1.0	1.25
Induced Employment	7,050	9,400	11,750
Total Impact Employment	16,450	18,800	21,150

IMPACT GROWTH ESTIMATES

In preparing revised estimates of the growth of population due to the construction of the U.S. Steel Mill, two assumptions are made.

First, it is assumed that the average size of family will be lower than that projected in the D.E.I.S. The reduced family size results from the assumption that most people who will be available to fill the jobs are young — either recent entrants to the labor force, or in-migrants. Mobility patterns indicate that most migrants are in the age groups between 20 and 35. Within the projected period, their family size is likely to be relatively small. A factor of 2.5 persons per family is utilized.

MWF-14

Secondly, no correction is made for adjustment of unemployment rates. It is not certain whether unemployment will decrease because of the availability of new jobs, or increase because of the region's attractiveness

to new residents. It is simply assumed that the new growth is most easily estimated by equating jobs directly to heads of households.

It will be noted that aside from reducing the number of persons per household, no factor has been introduced to account for workers who are not heads of households. Surely this is an important factor. Its omission was purposeful, if simplistic, since no factor was included to measure the increase of Regional population due to in-migration of construction-related workers. These omissions should cancel out one another.

REVISED ESTIMATES OF IMPACT GROWTH (1990)

	Low Estimate	Middle Estimate	High Estimate
Total Impact Employment	16,450	18,800	21,150
New Households	16,450	18,800	21,150
Persons/Household	2.5	2.5	2.5
Total Impact Population	45,500	52,000	58,500
Base Line Population Increase (From D.E.I.S. 1970-1990)	47,200	47,200	47,200
Total Population Increase	92,700	99,200	105,700
1975 Population			
Ohio Regional Area	102,000	102,000	102,000
Pa. Regional Area	356,400	356,400	356,400
Total Population (1990)	551,100	557,600	564,100

GROWTH DISTRIBUTION

It seems readily apparent to all Regional officials interviewed that the extent of the geographic area to be impacted by the proposed U.S. Steel Plant is substantially greater than that presented in the D.E.I.S. The scenario proposed by the impact assessment spreads the understated new growth evenly through a small area located along the lakefront. No new growth is assigned the City of Erie, the largest focal point in the economic and cultural center in the Region. Similarly, no spillover is anticipated in other urban centers within relatively short drives of the proposed facility.

IMP-15

This growth proposal is based on a number of assumptions which seem unjustified.

The majority of the growth (approximately 60%) is assumed to be located in Ohio, and this assumption is supported by the assertion that property taxes are far lower there than in Pennsylvania. In point of fact, the facilities and services most likely to be desired by new residents are much more extensively in place in Pennsylvania than in Ohio.

Few new residents, it is argued in the D.E.I.S., would move to the South of the Lakeshore communities. The Lakeshore communities would be attractive because of the east-west orientation of transportation facilities, the momentum of suburban growth to the east and west from the City of Erie, and the negative impact of the reputedly harsher winters away from the Lake.

The proposal suggests that almost all of these residents would live in new suburban housing and that the distribution of housing by communities would, for the most part, vary inversely with the distance from the Plant. Following these assumptions, a mathematical model was utilized to calculate and present extremely detailed measures of the impact on each of the impacted municipalities. The resultant impacts were not presented as ranges of possibility, but rather as finite quantities in detail greater than that justified by the generalization of assumptions. Conveniently, the predicted impact is distributed so that few problems would be encountered by any of the municipalities.

If the Steel Plant is built, the resultant growth will most probably be located in response to many more variables than were considered by the Impact Statement. These variables would include the policies, objectives, and limitations of governmental agencies, private enterprise, and the new people attracted to the area.

IMP-16

Governmental objectives and actions may substantially alter the location of new growth. Local, county or regional agencies in coordination with

their residents may develop and implement any variety of alternative policies. For example, governmental objectives might be directed toward the following goals:

Conservation and protection of the valuable agricultural resources along the coastal plains where the moderating effect of the Lake extends the growing season and provides a rich fruit and vegetable production. Such an option would obviously mitigate against the proposed scenario.

Minimize infrastructure costs related to new growth, so that new growth areas would be built upon extensions of existing systems. Extensive growth in rural areas east of the proposed Plant site would not fit this alternative.

Harness the growth to aid in the regeneration of communities. Such policy would focus attention on provision of housing units in the Cities of Erie and Ashtabula, scenarios not incorporated in the proposal.

Attain an economy of size for smaller communities to the South where a limited growth would provide a more economic tax base to support infrastructure needed but not yet provided in those communities.

Individual communities may also choose not to accept the rate of growth projected for them. If any one community should take such actions as are available to them to exclude all growth in the hopes of maintaining a desired quality of life, then heavier impact would fall on communities willing to accept growth.

The options of accommodating impact growth are yet to be addressed by local government. However, even the few objectives outlined above indicate that substantial variation may exist in the impact of any one

community from that which is projected. Some variability of range of the size and nature of impact in each community would be of substantial benefit to the local communities in establishing their growth objectives.

Private enterprise is not likely to respond as projected in the Impact Statement. A developer of new housing, for example, will seek to minimize costs of land, reduce front end costs, and lower the risk of capital investment by spreading the market appeal of his project. For most, this will mean locating close to existing population centers in an effort to induce other buyers as opposed to locating near the Steel facility and limiting his sales to direct growth impact of the Mill. The same will be true of almost all investments by the private market. This suggests that growth would be distributed primarily according to size of community and secondarily to proximity to the proposed Steel Mill.

MP-17

The consumers of the mid-1980's are very likely to vary substantially in their needs and lifestyles from those of the 60's. They will probably by substantially younger and have more diverse interests and lifestyles than steelworkers of the past recent decades. They are as likely to seek existing homes in central cities or truly rural and remote farm settings as they are suburban environments. They will most probably seek a wide variation of housing environments and move far beyond the projected coastal community impact area.

The most common choice for families locating their home in this Region (and probably throughout the United States) is to prefer proximity to the facilities and services the family needs rather than proximity to the place of employment. More trips are generated by the family each week to these facilities than by the worker to his job. Moreover, it is easier for the worker to share rides to work than for the family to their facilities. Commuting distances of up to fifty miles each way are not unknown. This behavioral factor suggests that proximity to established communities will be a much greater locational factor than proximity to the proposed Plant. Growth in such communities as Erie, Edinboro, Meadville and the like is indicated, but not included in the D.E.I.S.

MP-18

Some alternative evaluation of the wider geographic spread of this growth component, revised to reflect a more reasonable size of population would substantially improve the communities' ability to evaluate their options and measure the potential impact of their community. Alternative ranges of growth for communities would also be helpful..

MMP-19 The extensive detail generated by the Siepact IV Model with respect to individual communities will not be reviewed in full detail by this response because a new set of projections is needed. The present projections relating to land use needs, population densitites, costs of public improvements, extent of facilities and service needs, and the resultant character of the communities do not reflect the realities of development foreseeable from this impact. Inconsistencies also result from the use of the model. For exmple, the suggested ease and modest cost of extending sewer and water lines do not match the projected rural low density residential development.

MMP-20 The D.E.I.S. not only provides misleading information to municipalities with respect to growth impact, but also provides clearly erroneous material which can further mislead them. It suggests, for example, that revenues generated for municipalities by the U.S. Steel Plant will — at least in some cases — more than offset the costs of their response to the impact. One egregious error lies in the assumption that Springfield Township could eliminate its property tax because of the wage taxes generated by employees in the Plant. Township income is estimated to soar by over $400,000 per year as a result of this. This assumption is based on the misconception that in Pennsylvania, employees pay wage taxes to the municipality in which they work. Actual wage taxes that would be collected by the Township under the conditions projected in the D.E.I.S. would be in the range of $27,000 per annum, an amount equal to the wage taxes received by the Township in 1976. The costs of accommodating the growth of population in Springfield Township are not likely to be offset by the increased tax revenues and an increase in property taxes would result.

NEED FOR COMPREHENSIVE EVALUATION

The GM Assembly Plant in Lordstown, Ohio is referred to by the D.E.I.S. as a comparable project which had little affect on its metropolitan area. It is not comparable because of one important circumstance: while it was being built and brought into operation, the Youngstown-Warren MMP-21 area suffered large losses in basic employment in the Steel industry; the Regional Impact area for the U.S. Steel Mill, however, has experienced — and is expected to continue to experience — a steady growth.

The D.E.I.S. utilizes relatively conservative estimates which indicate that the population in the Region will increase by 31,000 during the decade of the 1980's, and that the number of households will increase by more than 20,000 during that decade.

This baseline projection was predicated upon a reduced rate of growth from that experienced between 1970 and 1975. The actual experience showed an increase of .87% per year while the projection utilizes 0.7% per year. Though these are seemingly small percentages, it should be pointed out that they represent a variation of 24% in the rate of growth and that this rate of growth is compounded annually. A projection of MMP-22 actual experience would add more than 10,000 additional persons to the population during the period of concern.

It is clear that the U.S. Steel Mill, unlike Lordstown, will be built in an area which is already growing. This growth climate will greatly aggravate the secondary impact from the U.S. Steel Plant.

In greatly underestimating growth resulting from the installation of the U.S. Steel facility, the D.E.I.S. bases its impact figures on the total increase in population of 15,800 with a corresponding requirement for new dwelling units of 4,350. The actual range of growth to be experienced during the impact period study will in fact be closer to 100,000 with a corresponding requirement for more than 40,000 new dwelling units.

The purpose of the Impact Statement to be sure is to measure only the impact resulting from the U.S. Steel Plant. But the presentation of only this impact growth constitutes a substantial disservice to the local communities thus impacted. For purposes of adequately assessing the efforts and investments that are required in the Region and its communities, the Impact Statement should present a comprehensive assessment of the implications of total growth. The output of such assessment could easily be separated statistically to show that which results from baseline projections and that which results from U.S. Steel impact.

WP-23

Related Evaluation of the Coho Generating Station

It is strongly urged that the D.E.I.S. be expanded to include a combined analysis of the U.S. Steel facility and the Coho Generating Plant. The combined impact of the construction activity for these two plants has already been eluded to and an effort to provide quantitative estimates of this impact should be included in this report.

WP-24

Additionally, the primary impact on air and water quality of these two facilities should be jointly studied. The two projects are not inextricably intertwined; yet it is probable that growth of population will require additional generating capacity before the end of the next decade. The combined evaluation is, therefore, considered to be prudent.

THE NEED FOR D.E.I.S. REVISION

Without a thorough re-evaluation, it is nearly impossible for the regional, county, and local municipalities to prepare adequately for the planning, financing and installation of required infrastructure and services. The same difficulties will be imposed upon the private market and on most of the people in the Region. The output of the assessment with respect to local municipalities in the Region is woefully understated in the D.E.I.S. Such understatement — if accepted in its present form — will lend authority to a growth scenario which,

WP-25

in fact, reports only a small fraction of growth which will actually occur. The local officials already sense that the stated impact is greatly underestimated, but they will face great difficulty in trying to muster needed resources from more remotely located governmental, financial and other agencies.

Much attention has been focused during this decade on communities adversely impacted by construction growth. The extensive problems which have been reported in these areas have invariably resulted from originally underestimating impact growth. It may seem anomalous that little attention was paid to these problems prior to the 1970's, but such interest corresponds to rapid increases in the size, timing and impact of these projects.

It is argued in the D.E.I.S. that experiences of impact in the "Sunbelt" area have no application to the subject project since they were located in smaller areas with fewer economic resources to draw upon. This is simply not the case. The vacancy ratio in housing in the Principal Study Area, together with the existing growth climate, clearly indicates that a very substantial housing shortfall will occur unless adequate response is made well in advance. Such response simply cannot be made if the extent of impact is as completely underestimated as in the D.E.I.S.

The most significant lesson to be learned from other growth impacted communities is that the problems for all parties are made more difficult and the adverse impacts of growth are amplified when the initial estimate of the size of the impact is underestimated. The problems of forecasting in this situation results in circumstances that are reversed from those that a forecaster normally faces. Usually, it is prudent for a forecaster to err on the conservative side and to underestimate growth rather than overestimate. If actual growth exceeds his estimate, few people are unhappy because more "progress" has been realized than had been expected. It is assumed that more "progress" means improved economic return for all parties and they are all happier because their return was greater than they had anticipated.

WP-26

In dealing with sudden spurts of growth, however, underestimating growth has a reverse effect. Consider, for example, the investment that U.S. Steel will make in the construction of the project. The daily interest on this investment is so enormous that delays in construction cannot be tolerated. Construction workers must be brought into the area and construction expedited regardless of whether or not adequate facilities are available for them. Under these circumstances, competition for housing when it is in a short supply results in inordinate increases in rental costs. Similar marginal pressures increase the costs of all other services and goods for which the workers compete. The introduction of the permanent labor force in this situation compounds the problems.

NWP-27 New facilities cannot be provided overnight in response to unexpected growth. In an effort to expedite those desperately needed facilities, traditional community standards with respect to growth management are necessarily set aside in response to the emergency. The worst examples of this scenario of "too little-too late" occur in areas having a smaller population and economic base than the subject impact area. But even if the problem is proportionately less, it is still a problem and all efforts should be undertaken in advance to avoid it.

The growth and impact which will result from the proposed facility presents a challenge and opportunity to positively affect the quality of life of the people of the three County Area. Substantial investments will be required in housing, services and facilities, and this investment has the potential to improve existing communities. The people and agencies of the Region are eager to harness the positive potential of expected growth, and urge that the indicated revisions in the D.E.I.S. be made.

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RELATED WORK ASSIGNMENTS / BECKMAN, YODER AND ASSOCIATES, INC.

Our planning work in Northwestern Pennsylvania dates back to 1962 and ranges from work for small municipalities to programming for the entire Northwest Region. The work includes:

Region:

- Overall Program Design - Northwest Pennsylvania Regional Planning and Development Commission.

Erie County:

- Land Use Element - in conjunction with the staff of Erie Metropolitan Planning Commission.
- Comprehensive Plans for Millcreek and Harborcreek Townships - in conjunction with the staff of the Erie County Planning Commission.
- Comprehensive Plan for the City of Erie - in conjunction with the staff of the City Planning Commission.
- "Erie County Parks" - preliminary design proposals for 6 Erie County Parks.
- Comprehensive Plan for Girard, Pennsylvania.
- Comprehensive Plan, Union Area - Union City, Union Township, Pennsylvania.
- Comprehensive Plan - Waterford, Pennsylvania.
- Zoning & Subdivision Manuals prepared for Erie County Planning Commission.
- "Planning in Erie County" - Production of a Movie for the Metropolitan Planning Commission.

Crawford County:

- Comprehensive Plan - Crawford County, Pennsylvania.
- Comprehensive Park & Recreation Plan - Crawford County, Pennsylvania.
- Industrial Interchange Development Studies - Saegertown & Geneva Interchanges.
- Corridor Development Study - Meadville, and West Mead Township, Pennsylvania.
- Comprehensive Plans for the Townships of Hayfield, Woodcock, Oil Creek, Summit, Cussewago and Cambridge; and the Boroughs of Saegertown, Cambridge Springs, Venango, and Blooming Valley.
- Comprehensive Plan - Titusville, Pennsylvania.
- Neighborhood Development Program, Better Days Project - Titusville, Pa.
- Industrial Park Design - Titusville, Pennsylvania.
- Campus Plan, University of Pittsburgh branch - Titusville, Pennsylvania.
- Burgess Park Addition Plan - Titusville, Pennsylvania.
- Neighborhood Analysis - Titusville, Pennsylvania.

Forest County:

- Comprehensive Plan for Forest County.

Venango County:

- Comprehensive Plan for Venango County.
- Land Use Plan for Venango County.
- Route 8 Corridor Study - Franklin to Oil City, Pennsylvania.
- Interstate 80 Interchange Study.
- Neighborhood Development Plan - Franklin, Pennsylvania.
- Administrative Manuals - Venango County Planning Commission.

Mercer County:

- Park & Recreation Plan - Mercer County, Pennsylvania.
- Urban Renewal Plans - Sharon, Pennsylvania.
- Neighborhood Development Plans - Grove City, Pennsylvania.
- Riverside Park Development Plans - Greenville, Pennsylvania.
- Neighborhood Park Plans - Farrell, Pennsylvania.
- Neighborhood Park Plans - Sharon, Pennsylvania.

Cattaraugus County, New York:

- Comprehensive Recreational Development Plan for the U.S. Army Corps of Engineers - Kinzua Reservoir.

In addition to these projects, we have performed work throughout Pennsylvania for more than 20 years and are familiar with State legislation, organizations, and procedures. We have also undertaken studies in Northwest Pennsylvania of an economic geography nature for a major private institution.

During this past decade, I have been heavily involved in impact planning for major industrial developments throughout the United States. Most of this work has been in connection with facilities through the Rocky Mountain area where large construction forces are needed in remote areas. My work has been primarily centered around the planning for housing and community facilities which will accommodate the initial construction force and remain useful for the permanent workers following the construction stage. This work has included:

- Southern California Edison Co. - Planning in connection with the proposed Kaiparowitz Project.
- El Paso Natural Gas - Planning in connection with the proposed installation of four coal gasification units on the Navajo Indian Reservation.
- Cypress Mining Co. - Housing in connection with an expanded copper mining and processing facility, Bagdad, Arizona.
- Bechtel Corporation - Planning in connection with housing for construction workers on the Grand Gulf Nuclear Power Project near Vicksburg, Mississippi.

- Texasgulf Corporation - Planning for construction housing in Rock Springs, Wyoming.
- Virginia Electric Power Co. - Planning in connection with construction workers for the Bath County Pump Storage facility in western Virginia.
- Detroit Edison Co. - Impact Studies for the Greenwood Energy Center near Port Huron, Michigan.
- Rocky Mountain Energy Corporation - Advisory services on housing and community facilities for proposed coal mining activities extending across the southern half of Wyoming.
- American Electric Power Co. - Housing feasibility study in connection with a Meigs County, Ohio coal mine.

RESUME: GEORGE BECKMAN

1960 to Present:	Founder and head of Beckman, Yoder and Associates, Inc., an interdisciplinary firm specializing in community planning and urban design headquartered in Wexford, Pennsylvania with offices in Fort Wayne, Indiana and St. Paul, Minnesota. As head of the firm, Mr. Beckman has supervised planning and programs for more than 400 municipal clients ranging from statewide planning studies to comprehensive planning for small municipalities.
1973 - 1977:	Director, Chief of Planning, York Town Properties, Inc., a Company providing specialized housing services in communities impacted by major construction projects throughout the United States.
1957 - 1960:	District Director, C. V. Hill and Associates, Planners. Mr. Beckman established and headed the Pittsburgh office for this Dayton, Ohio firm.
1954 - 1957:	Assistant Director, City Planning Commission, Ann Arbor, Michigan. Mr. Beckman was head of the urban renewal division of the City of Ann Arbor, among other duties.
1945 - 1952:	U.S. Navy, Naval Aviator, LCDR USNR-Ret.
Education:	B. Arch: City Planning, University of Michigan.
Professional:	Mr. Beckman is an approved Planner-in-Charge in Pennsylvania and many other states, a registered Community Planner in Michigan, and has been active in the leadership of several professional organizations. He has served as a lecturer at the graduate level in Urban Design at CMU, an instructor for Pitt and visiting lecturer to several universities.

RESUME: BRUCE YODER

1975 to Present:	As President of Beckman, Yoder and Associates, Inc. he has directed all of the firm's projects and served as Team Leader or Planner-in-Charge on selected projects where his particular training and experience would be most appropriate. His experience has included a variety of planning and design projects which have been successfully implemented including business district revitalization projects.
1968 - 1975:	Serving as Vice-President of the firm, he directed the firm's offices in Fort Wayne, Indiana and St. Paul, Minnesota. In this capacity, his experiences include a wide range of planning and growth management programs.
1963 - 1968:	During his first three years with the firm he served as a planner and designer for projects throughout Western Pennsylvania. In 1965, he established the firm's first branch office in Fort Wayne, Indiana.
1961 - 1962:	U.S. Army, First Lieutenant U.S.A.R.
Education:	BFA in Architecture, Ohio University.
Professional:	Mr. Yoder is a member of the American Institute of Planners (AIP), American Society of Planning Officials, Pennsylvania Planning Association and a member of other planning organizations. He served as President of the Indiana Chapter of AIP and also in various other AIP State and National leadership positions. In 1974, he received the Honor Award from the Indiana Chapter of AIP. Active in a leadership role in many civic organizations he is quite familiar with working with community groups both as a professional planner and as an active "volunteer". He is a "Planner-in-Charge" in Pennsylvania and other states and serves on the AIP National Examining Board. His guest lecturing invitations have included Architecture and Planning Schools at many universities.

STATE OF NEW YORK
OFFICE OF THE LIEUTENANT GOVERNOR
ALBANY 12227

MARY ANNE KRUPSAK
LIEUTENANT GOVERNOR

September 19, 1978

District Engineer
U.S. Army Engineer
District, Buffalo
1776 Niagara Street
Buffalo, NY 14207

ATTENTION: Regulatory Functions Branch

Dear Sir:

It has come to my attention that the New York State Grape Production Research Fund is concerned about a potential hazard to the New York State grape industry caused by the proposed U.S. Steel Corporation Lakefront Steel Mill in Conneaut, Ohio.

New York's grape industry is a vital part of the economy of our state. It is, of course, in the best interests of New York State to protect this industry.

NY-1 The New York State Grape Production Research Fund does not believe that the Draft Environmental Impact Statement for the Lakefront Steel Mill satisfactorily addresses the impact of steel mill emmissions on the grape industry in New York State. Please review the EIS to determine if this is correct. It is essential that the impact on New York's grape industry be minimized.

Thank you for your cooperation.

Sincerely,

Mary Anne Krupsak

NEW YORK OFFICE, HARLEM STATE OFFICE BUILDING, 163 WEST 125th STREET, NEW YORK, NEW YORK 10027
WESTERN NEW YORK OFFICE, 65 CHESTNUT STREET, 6th FLOOR, ROCHESTER, NEW YORK 14604

OhioEPA

Re: U.S. Steel Lakefront Plant Conneaut - USCOE

Colonel Daniel Ludwig
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

September 19, 1978

Dear Colonel Ludwig:

The Ohio Environmental Protection Agency, acting as lead agency and review coordinator for Federal Environmental Impact Statements received by the State, has solicited comments as to the adequacy of the above referenced Draft EIS. Comments were received from the Ohio Department of Agriculture, the Ohio Department of Transportation, the Ohio Department of Natural Resources and sections of this Agency. These comments have been coordinated and a comprehensive review letter developed.

The action proposed by the applicant, United States Steel Corporation, has been based on a determination of need for the facility and an analysis of site specific factors. In consideration of steel demand projections, (Section 1.10 and 1.11 of the Draft EIS) and viable alternative locations or schemes for increased steel production, the selection of a site or sites for the production of hot rolled steel sheet and steel plate products appears limited to a facility on the Great Lakes.

The Lake Erie coastal zone is one of Ohio's most valuable natural resources. It serves as a recreation center for the State, is a prized location for industry and is the dwelling place of almost 40% of the population of the State of Ohio. The location of a major steel producing facility along this already crowded shoreline must give special consideration to natural resources. Every effort must be made to replace lost resources and to reduce the impact of population growth which will result from the development. We believe a positive program can acheive these results and we welcome the opportunity to work with the officials of U.S. Steel and local governments to achieve these objectives.

OEPA-1 The Draft EIS represents the initial effort in this program, whereby the impacts of the action are measured and mitigation measures discussed. Chief among the early problems has been the question of mitigation measures for the taking of Turkey Creek. Although Turkey Creek does provide a unique beach fishery, it is enjoyed by only a few fisherman for a very short period of the year. We believe that if mitigation measures give consideration to the entire Lake Erie coast there are many things which can be done which would provide far more opportunities for Ohio fishermen than will be lost through the filling of Turkey Creek. Our Ohio Department of Natural Resources would be pleased to work with U.S. Steel officials to suggest such measures, to include construction of a fish hatchery or purchasing wetlands along the coast for use in fish production. The Department believes that it will also be necessary to construct "put and take" fisheries in the Conneaut area regardless of whether or not the steel plant is constructed.

State of Ohio Environmental Protection Agency
Box 1049, 361 E. Broad St., Columbus, Ohio 43216 • (614) 466-8565

James A. Rhodes, Governor
Ned E. Williams, P.E., Director

If the plant is constructed the requirement will be greater.

The following are essential considerations for the development and implementation of the projects mitigation plan:

a. The loss of habitat, changes in water quality, effects upon upstream waters, and impacts on in-stream and Lake Erie aquatic life resulting from the possible loss of Turkey Creek. Of particular note is the loss of one of only two Ohio streams which provides unique beach fishing for salmonoids. We believe that by putting Turkey Creek in a culvert through the plant area and exiting the culvert just north of the beach road, the beach fishery can be retained.

OEPA-2

b. Access must be provided to Turkey Creek Beach (water access is acceptable since this area will only support a maximum of 10 beach fishermen) and to the U.S. Steel East Breakwater.

c. Habitat loss and water quality degradation due to pier construction and related actions.

d. Secondary effects on inland waters and natural areas with special emphasis on the Conneaut Creek corridor.

e. Terrestrial and wetland habitat loss due to site development.

The applicant should develop specific plans for the preservation of a green belt around the plant site to help preserve the aesthetic resources of the Lake Erie coast. Also the secondary impacts of plant-induced growth could have a significant adverse effect on the Conneaut Creek valley. In private ownership, the Conneaut Creek gorge from Interstate 90, north to the Keefus Road bridge is considered to be one of the finest natural areas in the State of Ohio. Other inland areas may be adversely affected by secondary growth. Attached is a list of natural areas in the vicinity of the proposed plant with descriptions and locations. The Department of Natural Resources is currently evaluating such areas and developing priority lists. If local interests are planning measures to protect the Conneaut Valley and other important natural resources from encroachment or undesirable developments, the Department is prepared to cooperate with guidance and technical assistance through its Urban Rivers, Natural Areas and Scenic Rivers Program and Critical Areas Program.

OEPA-3

Also, local decision makers should be encouraged to direct this secondary growth and development away from the best agricultural land and toward land which has already been by-passed or impacted in other ways by past development. Agriculture is over a 30 million dollar annual industry in Ashtabula County. If it is to continue to make this kind of contribution to the local economy,

it needs to retain the best farm land.

At the meeting of all State agencies held on November 4, 1977, the Lead Agency Concept for development of the EIS was discussed and the Ohio Department of Transportation (ODOT) was assured that there was agreement between the federal agencies (specifically the Corps of Engineers and Federal Highway Administration) regarding this project. It was requested at that time that ODOT be furnished a copy of the agreement so as to determine which agency regulations would be applicable in complying with the NEPA requirements.

In absence of such an agreement, it is difficult to provide substantive comments on the document regarding its compliance with applicable transportation regulations.

OEPA-4

We were anticipating that this document would be prepared to a level of detail that would permit the ODOT to proceed with the necessary public hearings and design of the transportation projects that are identified as needed for the site development and operation of the U.S. Steel Plant.

The information needed to satisfy Federal Highway regulations (FHPM-7-7-2) is lacking. There appears to be lack of coordination at both the Federal Division and Federal Region Levels.

Since the social, economic and environmental impacts on the transportation related mitigation measures are not adequately addressed to satisfy FHWA regulations it will be necessary for ODOT to prepare an environmental document for any transportation projects resulting from the development of the U.S. Steel Plant.

Naturally, ODOT's concern in the development of this site is that adequate consideration is given to providing not only direct access to the plant area; but also, that other primary and secondary feeder routes that will be affected by the site and ancillary development are recognized and identified as to their specific needs.

OEPA-5

This information can then be utilized by the responsible local planning agency and incorporated in their future planning.

Since this information was not forthcoming then, we request that the Corps refrain from identifying a "preferred alternative" for transportation improvements. We requested that all transportation alternatives be treated equally and referred to as "alternate actions for the amelioration of the traffic congestion projected to occur during the construction and operation of the proposed plant".

SPECIFIC COMMENTS

1. Appropriate mitigative measures do not necessarily require action within the project's region. However, compensation to resource users should be confined to the regional impact area.

2. Regarding Turkey Creek: We view the loss of Turkey Creek as a serious matter, but it does serve a relatively few people. We believe there are mitigation measures which will provide far greater improvements to the Ohio fishery. We urge consideration of installing the creek in a culvert and discharging the water in the present outlet area so that the beach fishery will be maintained. We realize that access will be from the water, but this area will only support a few fishermen. We will insist on full mitigation of the project's impact on Turkey Creek. We believe these mitigation measures must be listed in the EIS if the public is to find this feature of the project acceptable.

OEPA-6

3. Summary Statement, (21) p.ix, 3rd sentence: Should read ... By 1990, approximately 5,300 operations-related new residents would occupy the area placing increased pressure on public ballfields, beaches, picnic, hunting, and fishing areas as well as private recreation areas.

OEPA-7

4. Summary Statement, (3), p.iii: Consideration should be given to wildlife related or outdoor recreational use of the 1,470 acres of land not slated for development.

OEPA-8

5. Regarding pier construction and intake and outfall construction: Any required blasting should be confined to the period June 1 through August 31 to avoid destruction of fish and ichthyoplankton during the critical spawning and migration period. A fish kill would be investigated by the Division of Wildlife (ODNR) and the applicant could be charged to pay compensation for the fish kill.

OEPA-9

Dredging and construction activities associated with the Conneaut Harbor East Pier loading dock, including channel maintenance dredging should be confined to the period June 1 through August 31. This will reduce impacts to spawning native species, such as smallmouth bass, and immigrating/emigrating adult and juvenile salmonids. Consideration should be given to possible alternative designs for pier construction which would not significantly alter water circulation patterns. Could pilings be incorporated into the deisgn of the proposed extended piers? We have serious concerns with the effects of oxygen depletion and possible anoxic conditions during warm months which could result from reduced water circulation (Volume 3, Section 4.681).

OEPA-10

6. Handling of Top Soil, Section 1.356: This section notes the top soil removed from the construction site will be stored until construction is complete. Are any affects on the top soil envisioned due to this extended exposure? What measures may be employed to protect this soil during the construction period?

OEPA-11

7. Sanitary Wastewater Collection and Treatment Section 2.372: Figure 2-25 appears to depict 201 Facilities Planning Areas, not 1990 service areas.

OEPA-12

8. Ashtabula City Service Area, Section 4.311: This section mentions North Kingsville being added to the Ashtabula City Facilities Planning area. We have no knowledge that such an event will take place. The Ashtabula City Facilities Plan is nearing completion at this time. At present, North Kingsville is ranked number 357 on our Municipal Project Priority list. We expect that they will carry out their own Facilities Planning.

OEPA-13

9. Surface Runoff - Construction, Section 4.495: "The applicant has indicated that it will implement the provisions of the Pennsylvania Erosion Control Plan on all parts of the site, including those in Ohio." The design of sediment basins and control of construction area runoff appears adequate provided the erosion control plan is followed closely during construction. Provisions should be made for the on-site monitoring of construction and erosion control activities.

OEPA-14

10. Impacts on Inland Waters, Section 4.564: This section is badly written. As it now appears to state, the applicant feels that the pollution caused by the storage area will not be significant since the existing pollution will "mask" the storage area pollutants. Given that Conneaut is embarking on a facilities planning program to abate pollution this "masking" effect will end. A re-write of the section appears to be in order.

OEPA-15

11. Protected Species, Section 4.771: Access to the project site by zoologists and botanists from the Department of Natural Resources should be provided. The purpose would be to perform biological site evaluations for the development of a program to determine the practicability and feasibility of species relocation. This relocation program should not be limited to only protected species, but should include any species of plant or animal for which relocation is justifiable, feasible, and practical. This program would be coordinated between the Division of Natural Areas and Preserves and the Division of Wildlife (ODNR).

OEPA-16

If a relocation program is determined not to be practical, on-site biological evaluations by departmental staff would still be valuable in determining appropriate mitigative measures to help compensate for the loss of special steel plant site elements.

Attached is a list of species, on the Natural Heritage Program inventory, which are located within the project site. Some of these species are reported in the Draft EIS.

12. Although the Draft EIS is relatively thorough in its evaluation of geologic conditions in the site area, it should perhaps be noted that additional data on recession rates of the Lake Erie shoreline are available from the Ohio Division of Geological Survey. Of particular interest are:

OEPA-17

Carter, C.H., 1977, Sediment-load measurements along the United States shore of Lake Erie: Ohio Geological Survey Rept. Inv. 102, 24 p.

Ohio Division of Geological Survey, Lake Erie shore recession line maps: Open file maps 98 and 99.

In addition to the recession rates presented in the Draft EIS (Table 2-313, page 2-712), Carter (1977, page 13) reports a very slow rate (less than 1 ft/yr, .30 M/yr) for the shore reach from the Pennsylvania Ohio line to the coal docks at Ashtabula River.

We appreciate the opportunity to review this Draft EIS and look forward to the Final EIS being prepared.

Sincerely,

Ned E. Williams
Director

NEW/dmc

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Ohio Chapter Sierra Club

September 20, 1978

Colonel Daniel Ludwig
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The Sierra Club, as a long-established environmental organization of over 200,000 members nationally, is dedicated to the protection and OSC-2
preservation of natural resources. Our members have studied the proposal by United States Steel for a lakefront steel mill, and have reported our findings to other members, discussing the project with them. Our members have also offered comments, both at public hearings on this project and by letter, all of which concerns are incorporated herein, by reference. In the following pages we outline what we see as major problems which should be addressed in the final Environmental Impact Statement to assist in the determination of the public interest. We have also participated in compiling a set of outstanding questions whi are being submitted, in a separate letter from a number of individuals who have been working together, as a coordinating committee, here in Cleveland, since early 1977.

The Sierra Club recognizes the need for modernization of the nation's steel-making capability. At the same time, we believe that the siting and design of massive new facilities must conform to widespread social objectives and national needs, and not just to the immediate convenience of a single steel-making corporation.

Specifically, the Sierra Club believes that the proposal of the United States Steel Corporation to build an integrated steel-making facility, originally announced to be the largest steel mill in the OSC-3
world, at a lakefront site on Lake Erie, between Conneaut, Ohio, and Erie, Pennsylvania, fails to consider the broad public interest in at least two fundamental particulars.

First the proposed project would unnecessarily sacrifice a significant portion of natural Great Lakes shoreline to industrial development. Such shoreline is a fast disappearing amenity for the people of the Midwest, and its scarcity is probably more acute in eastern Ohio than in any other stretch along the Great Lakes. The urgency of this
OSC-1 obligation to protect shoreline and preserve it for use by future generations is recognized, nationally, in the recent federal legislation for coastal zone management. Yet the draft Environmental Impact Statement fails to provide consideration of the amount of undeveloped shoreline that remains, in relation to the amount that would be withdrawn

by this project. The draft fails even to respond to the suggestion offered frequently at the 1977 public meetings, that it consider alternatives in design that might combine recreational use of the shoreline itself with a setback of production facilities which could operate just as well further inland.

Second, the Conneaut site does not have near at hand the social and economic infrastructure needed for, first, construction, and, thereafter, operation of a facility of the magnitude that U.S. Steel is proposing. The Sierra Club believes that new steel mills belong in areas with a steel-making tradition, thus eliminating the necessity of dislocating large segments of the work force and their families, of duplicating homes and streets and schools and parks and sewers for these people. A full accounting of the costs to the total system must also include recognition of the losses, both in the elimination of the activities now performed by the land at the proposed site and in the adjacent agricultural counties, and in the reduced usefulness, through reduction, or perhaps abandonment, of steel-making in Youngstown and Cleveland, Ohio, in Gary, Indiana, or in Pittsburgh, Pennsylvania. These standing cities represent the investment, through taxes on their earnings, of earlier generations of steel workers, and these are the towns where, in the event of some future cyclic cutback in steel production, there is the liklihood of creating new ghost towns. The "greenfield" concept, as applied at Conneaut, would lead to severe "boom town" dislocations in the city itself and in surrounding townships and counties, while hastening the obsolescence of present steel-making communities.

We feel that insufficient consideration has been given to the adverse environmental effects over the full region that would be affected, beyond the three adjacent counties. Although we have heard the applicant, U.S. Steel, maintain that other plants will not be abandoned so long as they remain "profitable", we believe that evaluation of the proposed project must address this possibility, that existing plants may well become "not profitable" when capital for maintenance and for modernization is diverted to the new project. Thus, the possibility that the project in Conneaut will have an impact upon the environment in these other areas where such abandonment may occur is strong, and the Sierra Club believes that it should be evaluated. Furthermore, there is now available a substantial body of scholarly information which indicates that the direct cost to the private industry is also less, when expanding capacity through "brownfield" development than when attempting to increase capacity with "greenfield" facilities (see, for example, INDUSTRY WEEK, May 15, 1978, p. 74, and recent work by Chase Econometrics, and by M.I.T. for the Office of Technology Assessment.)

When a corporation as large as United States Steel proposes to construct a facility with a production capability that represents a significant fraction of the nation's total steel output, then it is appropriate for the government and the nation, in order to determine the public interest, to participate in considering alternate locations for the facility. This analysis should be carried out in consideration of world market needs, of existing infrastructures, of sources for the work forces, of the "minimum task energy" to achieve the desired goals, of the various subsidies that would be provided from the public sector for the different siting and transportation alternatives. For these reasons, the Sierra Club believes that a disclosure of all information and factors relevant to consideration of alternative siting of the project, and specifically relating to the current debate of the "brownfield versus greenfield" issue is required here, for conformance with the mandates of the National Environmental Policy Act.

OSC-4

Furthermore, the Sierra Club submits that the Corps of Engineers' proper response to these and other comments which they have received entails more than a simple report that the comments exist. The law requires that all comments obtained from the public and from other agencies be meaningfully employed in the preparation of the final statement. Not only does this call for the development and maintenance of a comment disposition record, but also for some interactive process of public meetings whereby the implications of technical comments, as they are generated by the experts in the various agencies of state and federal government, can be aired and examined, and utilized to develop an increased appreciation of the dimensions of the impacts the project would have.

OSC-5

The Sierra Club urges the Corps to utilize the assistance of its interagency teams of experts and, where necessary, to obtain the assistance of independent authorities to evaluate and consider the complex and substantial questions that are being raised regarding the proposed steel mill. The Sierra Club trusts that, through appropriate delegation of duties, the Corps will be able to respond to all comments which are relevant and reasonable, either by conducting the research necessary to provide satisfactory answers, or by supplying the page reference to those places in the Impact Statement which provide them. As stated by the Honorable Judge Beeks of the Federal District Court for the Western District of Washington:

> "The proper response to comments which are both relevant and reasonable is to either conduct the research necessary to provide satisfactory answers, or to refer to those places in the Impact Statement which provide them. If the final Impact Statement fails substantially to do so, it will not meet the statutory requirements." Daly v. Volpe, 350 F.Supp. 252, 265, 2 ELR 20443, 20547 (W.D. Wash. 1971).

OSC-6

We are concerned, overall, with the challenge to the evaluation procedures under NEPA that are present in the present instance. We have indicated, earlier, our regret that the detailed technical comments from the appropriate experts within the state and federal agencies were not available for presentation at the recent set of public meetings. Here, many of the prospective neighbors of the proposed mill were learning (for the first time) what might be in store for their health, their livelihood, and their chosen way of life. This belated recognition, by the affected public, is distressing evidence of the agonizingly slow process of diffusion of information that attends our current procedures for public participation. Despite the hearings, press releases, headlines and organized information efforts, dating back as far as February, 1977, we find a scene of grievance. This suggests that additional modes of information sharing and policy reevaluation will be needed in the months ahead.

The Sierra Club, with its large membership, its long experience in the effort to evaluate the social costs of projected changes in land use, and its dedication to the support of our environmental protection laws and regulations, will seek to assist the various parties in this evaluation process in every way possible.

Sincerely yours,

Ellen Knox, Chairman
Great Lakes Task Force
Sierra Club

EK:gw

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL RESOURCES

The Secretary

August 31, 1978

SUBJECT: Draft Environmental Impact Statement on the Permit Application by United States Steel Corp. for the Proposed Lake Front Steel Mill in Conneaut, Ohio prepared by the U.S. Army Corps of Engineers, Buffalo District

TO: Colonel Daniel Ludwig
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York

FROM: Maurice K. Goddard, Secretary
Pennsylvania Department of Environmental Resources

The Pennsylvania Department of Environmental Resources has reviewed the above-mentioned draft environmental impact statement and wishes to offer the following comments:

The quality of most of the scientific background work is sufficient to provide an adequate record of existing physical environmental and natural resources within the plant site. With regard to certain crucial issues, however, the Draft EIS does not readily lend itself to making final decisions. This is because there is inadequate analysis of alternatives. The Final EIS should correct this deficiency.

Those portions of the Draft EIS that deal with the secondary growth and development impact which will unquestionably accompany the construction and operation of a steel plant of this size are seriously lacking in scope, detail, and evaluation. There may be a question about the extent of U. S. Steel's responsibility with regard to secondary development; however, it would appear that the Corps of Engineers' EIS should deal more adequately with such environmental matters as public water supply, collection, treatment and disposal of sewage, solid waste management, air quality, and land use in the secondary impact areas. The Final EIS should include significantly greater emphasis on secondary impacts and analysis of alternatives for coping with them.

PDER-1

PDER-2

PDER-3

Air Quality

1. The Draft EIS appears to assume that the entire air quality increments, as specified in the section on Prevention of Significant Deterioration (PSD) of the Clean Air Act Amendments of 1977, are available for use by the proposed steel plant. This is especially critical for the short-term increments (24 hours). The projections of the highest increases in the 24 hour concentrations due to the plant are 83 micrograms per cubic meter (m/m^3) for sulfur oxides and 30 m/m^3 for particulates. The allowable increments are 91 m/m^3 for sulfur oxide and 37 m/m^3 for particulates.

The air quality projections for 1985 and 1990 do not include emissions from the new power plant proposed by Pennsylvania Electric Company, (Cohe Station) for which an application has been submitted to the EPA. The potential emissions from the power plant and the steel plant must be evaluated together to determine their projected combined impact on the allowable PSD increments.

In addition to the major point sources, the air quality impact associated with secondary development must be included in the analysis. No analysis of the short-term impact of secondary development is presented.

For short-term modeling, only receptor sites along the perimeter of the property line were evaluated. Other receptors should also be evaluated. The air quality impact on receptors away from the plant perimeter would be necessary to the analysis of the additive impact of this plant and any other ne air pollution sources in the area.

Property line receptors were also used in the analysis of the effect of lake breeze fumigation. The Bureau of Air Quality's meteorological section feels that the maximum concentrations caused by lake breeze fumigation would be at 12 to 20 km downwind. Therefore, the projections in the Draft EIS may no represent the highest concentrations.

2. The Draft EIS estimates that hydrocarbon emissions in the regional study ar will increase by 6% as a result of the plant and 8% overall. Since this is A nonattainment area for photochemical oxidants/hydrocarbons and permit action is anticipated prior to July 1, 1979, trade-offs must be found for those increas emissions. If permit action is delayed until after July 1, 1979, a demonstratic of reasonable further progress toward attainment through emission reductions mus be made or emissions from the new plant must not exceed emissions for new source projected in a revised state implementation plan.

3. The analysis of the impact on agriculture is very limited. The Department of Agriculture did not agree with the mitigative measures suggested in the Environmental Assessment (in Identification of Critical Issues and Concerns). T some measures are suggested in the Draft EIS.

Water Supply and Water Quality

PDER-4

1. Generally, the U. S. Steel proposals to protect water quality, with regard to plant discharges, are acceptable. With the exception of ammonia, the company proposes to meet the new point source effluent requirements for the integrated iron and steel industrial water category. These point source effluent requirem

and the reasonable amount of initial dilution will not create conditions that are toxic or lethal to fish within a twelve acre mixing zone and will meet state water quality standards outside the mixing zone. The Draft EIS should describe how the standards for ammonia will be met.

2. The Department, however, has certain other concerns about the Draft EIS. For example, the Erosion and Sedimentation Program is unclear and needs more attention. A complete E & S Plan must be prepared and submitted for approval before construction may begin. The erosion and sedimentation control program as outlined in the Draft EIS is unclear. At one point, the report indicates that soil losses may be as high as 200,000 tons per year. At another point, losses are indicated at about 6,500 tons per year without corrective measures and 2,600 tons per year with corrective measures. This should be clarified. Furthermore, the basic approach of controlling sediment alone and not controlling erosion should be re-evaluated. We would prefer to see erosion controls to prevent soil losses. In any case, sediment losses both during and after construction should be considered in relationship to the continuing maintenance and operation of Conneaut Harbor for navigation and to prevent an adverse impact on the current PDER-5 uses of the waters in the area. In order to protect the cold water fisheries, sediment losses from any parcel of land during the construction phase should not exceed losses from strip or row cropping where good management practices are in use. These losses should be sustained for no more than one season. After that, added controls should be installed to reduce losses to that of a well-managed pasture. Buffer strips along waterways should be installed to maintain the current cold water uses of the stream. Buffer strips will serve the dual purpose of removing sediment and provide continuous shading of the waterways to minimize elevated summer temperatures.

3. The storm water management system is unclearly identified in the Draft EIS. Our experience with some other steel mills indicates that the roofs and surrounding areas are filthy as a result of the steel making activities. In certain areas, significant amounts of cyanide and phenolics are appearing in area waters during runoff. This has been attributed to general runoff from the area. It is not clear if this condition is due to loss of materials that were deposited a long time ago, or if it is a result of current practice. Given the ephemeral nature of cyanide and the fact that cyanide is currently being found, losses are probably a result of current practice.

The concern about storm water will be met if the following is done:

PDER-6

a. All storm water, including roof drainage, is discharged through the Lake outfall.

b. All of the discharges through the Lake outfall are monitored for cyanide.

c. The effluent limitations of the Lake outfall are not changed.

An alternate method of handling storm water is to use it as part of the manufacturing process. The Company takes in 93 million gallons of water per day from the Lake. The area that will be disrupted and from which runoff control

is desirable is 1,290 acres. The daily requirements of the plant, spread over these 1,290 acres, would be equivalent to 2.7 inches of runoff. Assuming that the area is completely impervious, a storm event of this magnitude in Erie has a reoccurrence interval of between 2 and 5 years. The Company has already indicated that it intends to construct sediment control facilities to handle one day storage of runoff. The discharge from this storage could be connected to the water intake lines. This procedure could result in zero discharge of storm water. Additional benefits may be derived from this procedure since the company has identified total dissolved solids in the lake water supply as a deterrent toward achieving high levels of recirculation in the cooling tower and process water systems. The runoff is likely to have lower concentration of dissolved solids than the Lake (although the suspended solids would be higher) and dilution of the Lake water with the storm runoff should improve the quality of the industry water supply to the point where the monetary benefits derived from such a system may exceed the cost of making the connection.

4. The water intake may have an adverse impact on the fisheries in the area. The area is a spawning area, and large amounts of fish eggs and drifting fish larvae will be sucked into the water intake and subsequently killed by the plant PDER-7 water usage. Relocation of the water intake may be desirable. Similarly, relocation of the discharge point should be considered to avoid fisheries problems. Because of inadequate data in the Draft EIS, we cannot determine where a more desirable intake-discharge point should be located.

5. During the entire Draft EIS process, we have indicated that the data collection PDER-8 program would not provide adequate data to make a good evaluation of both the impact of the project and for identifying any mitigative measures that might be taken to offset irreversible impacts on fish and aquatic life. This lack of data cannot be used as a foundation for negative declarations, and we will not accept negative conclusions which are based on inadequate data.

6. The proposed changes or possible elimination of Turkey Creek is one of PDER-9 primary concern to the fish and game management agencies of the Commonwealth. Further consideration needs to be given to preventive and mitigative actions for this stream in order to receive favorable consideration of the application for a 404 permit.

7. No mention is made of Penelec's proposed Ohio Electric Generating Facility PDER-10 (completion date, 1986) in future growth and resource use projections. The last sentence of page 2-931 dealing with power-cooling use appears to reflect water use by this facility; however, it makes no specific referral to it. This should be clarified.

Solid Wastes

PDER-11 1. Storage of slag must be accomplished in a manner to preclude surface and ground water contamination. Storage of accumulations of reusable or reclaimable material shall be allowed to the extent of a verifiable rate of recovery, plus a reasonable supply for market or reuse. The rate of recovery shall be verified by valid contractual arrangements or historical reuse.

Geologic Concerns

1. Volume III, page 4-486 - The subject of "Geologic Hazards" is dealt with in only one very short paragraph. There should have been discussion of the geologic hazards due to lake front erosion and an additional discussion of whether the seismicity of the area poses any problem in the construction, design of the plant. Lake front erosion and seismicity are both problems to be dealt with in the Lake Erie area. FDER-12

Shoreline bluff stabilization strategies must be presented in the Final EIS. The lake bluff zone of the proposed facility site is the most critically eroding area of Pennsylvania shoreline. With the plans on page 4-488 for widespread vegetation removal, surface water runoff and infiltration will significantly increase, thus drastically increasing the mass wasting of lake bluff materials in this area. In addition, no mention is made of the impacts to eastward lakefront areas, and particularly Presque Isle Peninsula as a result of this additional sediment load to the littoral drift. Or, conversely, if mitigative measures are taken to reduce the amount of erosion below what now is apparent, what effects this will have on eastward properties, especially Presque Isle, must be considered. FDER-13

2. In Volume II, page 659, there is a typographical error in the heading of the page. It now reads "Regional Ecology" and should read "Regional Geology." In the index to the volumes the correct terms "Regional Geology" are used. FDER-14

Secondary Environmental Impacts

The report does not adequately assess the potential of secondary growth impacts. Although this may not be a direct responsibility of U. S. Steel, it should be a matter of major concern to the Corps of Engineers. The following are specific secondary development concerns that need to be addressed:

1. A more accurate projection of population growth and secondary development resulting from the construction of this facility is needed. FDER-15

2. Population growth generated by the proposed steel plant would increase demands for expanded water supply and sanitary wastewater treatment and collection services, especially in East Springfield Borough and Springfield Township. The Draft EIS suggests that affected municipalities begin planning to meet these projected demands. However, the Draft EIS deals only superficially with the steps that the municipalities can take to adequately cope with these demands. Two water supply alternatives that should be further explored in the Final EIS are:

a. Since the proposed lake front plant will satisfy its water supply needs with water from Lake Erie and, since the most dependable but expensive method of supplying the projected future water needs of East Springfield Borough is with water from Lake Erie, the Borough might, through legal arrangements, be permitted to tie into the Lake Erie water supply intake for the steel complex. FDER-16

b. A thorough hydrogeological study may possibly identify areas of high ground water yield. The area and the Lake Erie Basin Report indicates that there are ancient stream valleys in the region filled with gravel aquifers that produce high yields. Therefore, while we

- 5 -

can agree with the conclusions that randomly drilling the area could result in water deficiencies, we believe that an effort to develop ground water in a knowledgeable and scientific manner could provide the water supply that is needed.

3. The information in the Draft EIS on ground water impacts implies that through adherence to technical construction standards for on-site sewage disposal systems, there will be no significant adverse impacts on ground water quality. Such a premise overlooks the impact of the density of development potentially utilizing on-site systems over the long term if public sewerage is not provided in heavily built-up areas. Under these circumstances, consideration must be given to the potential for hydrologically overloading the receiving soils and/or the ability of the soils to deal with chemical contaminants such as nitrate nitrogen. FDER-17

4. The report lists regular maintenance and pumping of septic systems as a mitigating measure against the potential for ground water contamination. Failure to maintain on-site sewage disposal systems results in clogging of soils in absorption fields which usually leads to system malfunction and surfacing of sewage liquids. The primary advantages of good system maintenance are increased longevity of systems and prevention of public health hazards due to discharge of inadequately treated sewage effluent. Such maintenance does little to protect ground waters. FDER-18

5. The Regional Study Area encompasses certain watersheds which are to be protected under the State water quality anti-degradation program. These waters include:

- Crooked Creek Basin in Springfield Township, Erie County
- Godfrey Run Basin in Girard Township, Erie County
- Conneaut Lake Basin in Sadsbury Township, Crawford County

Municipalities should be encouraged to develop comprehensive plans and land use controls to help protect the high water quality in these basins.

6. The Draft EIS should encourage communities within each drainage basin to coordinate their storm water management plans. Unless development throughout an entire drainage basin is properly planned and controlled, accelerated surface runoff will increase flooding potential in downstream areas.

7. The report does not assess the adequacy or provisions for solid waste collection and disposal for the impacted municipalities. FDER-19

8. The Draft EIS should provide a complete listing of types of environmentally sensitive areas found in the Regional Study Area. The Draft EIS does mention some types of environmentally sensitive areas such as floodplains, prime farmland, and wetlands; however, a comprehensive checklist would help municipalities identify environmental features which may need protection. The Pennsylvania Coastal Zone Management Program conducted a comprehensive environmental resource inventory in the Lake Erie area. This program can be used as a reference for identifying the types of environmentally sensitive areas found in the Regional Study Area. FDER-20

PDER-21 The Draft EIS also provided specific strategies for protecting agricultural lands and flood plains from the adverse environmental impacts of secondary development. This should also be done for other types of environmentally sensitive areas, especially wetlands, open space, lake bluffs, and stream corridors.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HARRISBURG, PENNSYLVANIA 17120

OFFICE OF
SECRETARY OF TRANSPORTATION

September 6, 1978

Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Sirs:

At the request of our Governor's Office, we are forwarding a copy of our comments on the DEIS for the U.S. Steel Corporation's Lakefront Steel Mill directly to your office.

If you have any questions regarding our comments please contact our Office of Environmental Quality, Room 1209 Transportation and Safety Building, Harrisburg, PA 17120, telephone number 717-787-1024.

Sincerely,

George S. Pulakos

George S. Pulakos, P.E.
Acting Secretary of Transportation

Mr. W.W. Kobe - 1209 WK

OA-301 12-67

COMMONWEALTH OF PENNSYLVANIA
Department of Transportation
Harrisburg
September 5, 1978

SUBJECT: PennDOT Review of DEIS for Proposed U.S. Steel Lakefront Steel Mill

TO: Mr. Joel Epstein
Special Assistant to the Governor

FROM: George S. Pulakos
Acting Secretary of Transportation

We have reviewed the lengthy DEIS for the proposed U.S. Steel Corporation's Lakefront Steel Mill and we would like to inform the Governor and the Corps of Engineers of our concerns and suggestions relative to the orderly development of the transportation improvements required for construction and operation of the mill.

ENVIRONMENTAL CLEARANCES FOR ACCESS ROADS

Realizing the importance of providing safe and efficient highway access to the mill before or during construction and operation of Phase I, we are concerned that time-consuming delays may be met in obtaining separate environmental clearances prior to or concurrent with the access roads' design. Until our review of the DEIS revealed that several highway-related environmental issues were not properly resolved in the document, we assumed that this DEIS would basically satisfy all NEPA requirements and design would progress accordingly. In order for this DEIS to serve as the primary environmental document for the access road development, we feel the following environmentally-related issues should be resolved before the Final EIS is approved.

Section 4(f) Involvements

PDOT-1 PennDOT and/or FHWA highway projects involving public recreation lands are considered to be Section 4(f) Involvements under both Pennsylvania Act 120 and United States Code 49, 1653(f). These involvements require detailed statements that are usually prepared with a DEIS and FEIS and extensive interagency coordination. If the proposed access roads do not involve public recreation lands, this should be made clear in the FEIS.

Historical and Archaeological Involvements

PDOT-2 The DEIS does not clearly indicate that there are no Historical or Archaeological sites of local, state or national significance affected by the proposed access road construction. These involvements also require detailed statements and extensive interagency coordination. If the proposed access roads do not involve sites of local, state or national significance, this should be clarified in the FEIS.

Wetland Involvements

PDOT-3 Page 4-738 of the DEIS raises the question as to whether or not the proposed access roads are involved with wetlands. This DEIS falls under the President's Executive Order 11990 - Protection of Wetlands. Subsequently, the Corps of Engineers and FHWA have specific procedures to follow with wetland involvements. If the access roads will involve true wetlands, these procedures must be followed. If not, it should be made clear in the FEIS that the access road development does not involve wetlands.

Floodplain Encroachment

PDOT-4 Since the proposed access roads may encroach on the floodplains of tributaries to Turkey Creek, a flood hazard evaluation should be conducted to ensure that no highway improvements will cause flooding during a 100 year flood. The FEIS should state the results of the evaluation.

Fish Migration through Highway Structures

PDOT-5 In light of the Pennsylvania Fish Commission's and the U.S. Environmental Protection Agency's serious objections to the channelization (as shown in the DEIS) of Turkey Creek, we are concerned that the access road stream crossings (most likely pipes and culverts) in the headwaters of Turkey Creek do not prevent the migration of fish and other aquatic organisms. A general statement should be made in the FEIS that PennDOT will coordinate the culvert designs with the Pennsylvania Fish Commission to provide for the migration of fish where warranted.

Public Involvement

After reviewing the DEIS and observing the August 22, 1978, Public Hearing for the proposed steel mill in West Springfield, it became apparent that the public involvement program for the DEIS development focused on primary and secondary impacts of the mill's construction and operation, with little or no emphasis on the access road alternatives and their impacts.

PDOT-6 We are concerned that the previous public involvement process for the overall proposal will not satisfy the highway design/EIS public meeting or hearing requirements for the access road development. With this in mind, we would like to coordinate with the lead agency to ensure that this condition is corrected.

Relocation Impacts

PDOT-7 The DEIS does not adequately address the relocation impacts of the various access road alternatives. The FEIS should assess the relocation impacts on people and businesses to the degree possible in the primary highway development phase. In addition to addressing these impacts, the FEIS should describe available relocation housing in the area and the ability to provide it for displaced families.

HIGHWAY TRAFFIC IMPACTS

Secondary and Local Road Traffic

Paragraph 4.352 of the DEIS indicates that the traffic volumes on secondary and local roads were not considered in the analysis of traffic requirements for the mill. We feel that these secondary and local roads traffic volumes should be considered and discussed in the FEIS with special emphasis being placed on intersections with primary routes and at railroad grade crossings where unsafe signing, signalization or sight-distance conditions will be created.

PDOT-8

Traffic Impact Mitigation

Paragraph 5.52 of the DEIS states that traffic congestion at major highway intersections near the site will be a problem even if major improvements in the roadway network are completed. Also, subsequent paragraphs discuss mitigation measures to reduce congestion. We feel that the public transportation alternative should receive the detailed analysis mentioned in Paragraph 5.56 and the results discussed in the FEIS. More specifically, bus, rail passenger service and vanpooling seem to warrant further consideration. It is agreed that highway levels of service will be unsatisfactory. This mandates a traffic-free public transit alternative. For several years, a light rail rapid transit service has been sought for the Erie Metropolitan area on the vacant trackbed of one of the former New York Central Railroad (now ConRail) tracks between Harbor Creek and Lake City, passing downtown Erie and the Erie International Airport. Lake City is but 13 miles from Conneaut. The transit proposal, amended to serve U.S. Steel, could provide transit for a significant number of employees, reducing highway congestion and augmenting transit ridership.

PDOT-9

Subsidies for public transit are not a restraint. Federal laws provide more transit assistance than Erie can presently utilize. All public transit services require subsidy. A service that minimizes subsidy is recommended.

For commuting other than parallel to the Lake Shore, vanpooling will aid in mitigating the predicted congestion. Each van will replace approximately ten automobiles. Each rail car will replace 30 automobiles. Energy will be conserved, pollution will be abated, travel will be safer and more economical. A comprehensive, multi-modal solution must be considered.

In addition, local commuter bikeways should be considered as an additional traffic and energy conservation measure.

Induced Traffic Growth

The DEIS traffic projections for the study area highway network do not reflect traffic growth induced by secondary development. Because of the potentially serious impact these induced traffic volumes may have on all highways in the study area, the DEIS traffic projections should be adjusted to account for this secondary development.

PDOT-10

HIGHWAY MAINTENANCE IMPACTS

Paragraph 4.357 of the DEIS indicates that additional traffic flows will increase highway maintenance budgets but fails to quantify the anticipated budget increases. We realize that it is very difficult to accurately predict the maintenance budget increases for each municipality and it may not be within the scope of the DEIS to do so. However, we do feel that it is within the scope of the FEIS to identify the roadway mileage in each municipality that will require increased maintenance and the type of maintenance required. It should be noted that any increase in new roadway mileage or local population will automatically bring increased state funding to the local municipalities for road improvements at the rate of $691.00 per mile and $3.77 per capita. (Sept. 1, 1978 figures) Also, we feel that roads that will require immediate attention for Phase I construction of the mill should be identified as soon as possible.

PDOT-11

EXECUTIVE SUMMARY FOR FEIS

Our review of the 3600 page DEIS provided us with a challenging yet cumbersome experience. Although the quality of the material presented in the DEIS was satisfactory, the quantity was overwhelming. We strongly suggest that an "Executive Summary" be prepared for the FEIS that would serve a two-fold purpose:

PDOT-12

1. Provide agency decision-makers with a capsule of significant issues on which to base their decisions. Agency managers do not have time to read the 3600 page document.

2. Provide the general public and mildly interested parties with sufficient information to satisfy their concerns or at least help them recognize them. This may also reduce requests for copies of the costly DEIS.

CONCLUSION

We sincerely hope that the issues or concerns we have raised regarding the adequacy of the DEIS will not be counterproductive or cause unnecessary work for the authors. Do not hesitate to contact us to clarify them or request more detailed suggestions to work out the transportation problems.

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
Fisheries Environmental Services
Robinson Lane
Bellefonte, PA 16823

814-359-2754

September 8, 1978

Col. Daniel D. Ludwig
District Engineer
Attn: Regulatory Functions Branch
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

Attached are the Pennsylvania Fish Commission comments on the Draft Environmental Impact Statement for the United States Steel Corporation's Proposed Lake Front Steel Mill, Conneaut, Ohio.

We do not consider this Draft Environmental Impact Statement to be adequate to determine the real impact that the proposed plant could have on the aquatic environment involved.

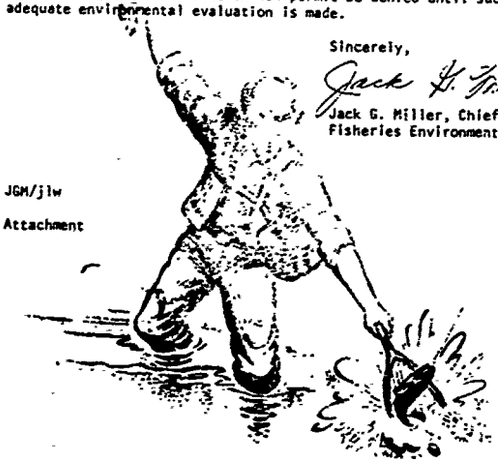
It is therefore the recommendation of the Pennsylvania Fish Commission that the request for a Section 404 permit be denied until such time as an adequate environmental evaluation is made.

Sincerely,

Jack G. Miller, Chief
Fisheries Environmental Services

JGM/jlw

Attachment



PENNSYLVANIA FISH COMMISSION COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE U.S. STEEL CORPORATION'S PROPOSED LAKE FRONT STEEL MILL, CONNEAUT, OHIO

Summary

PFC-1 Page iv, Number (11). The filling of Turkey Creek is completely unacceptable to the Pennsylvania Fish Commission. This stream supports a cold water fishery for trout and salmon and should be protected.

PFC-2 Page viii-ix, Number (19). Increase in sewage loads and the resulting increase in BOD and phosphorous loading of area waters by 2.1-3.7 percent could cause enrichment problems in the streams and at their mouths on Lake Erie.

PFC-3 Page xi, Primary Impacts, Number 1. The diversion of Turkey Creek via a ditch to Conneaut Creek is unacceptable. To replace a viable fishing stream with a ditch cannot be condoned. The loss of this stream to migratory fish (in Ohio) would be a great loss to the developing anadromous fishery.

PFC-4 Page xii, (8) (1.7). The sulfur dioxide could also cause acid rains which could effect the Pennsylvania Fish Commission hatchery facilities at several locations east of the proposed plant.

PFC-5 Page xiv (21) (22). These could adversely effect both the sport and commercial fisheries in Pennsylvania waters because of the prevailing lake currents.

PFC-6 Page xv (9). Some of the local streams are already stressed due to sewage. An increase in BOD and nutrients could cause serious problems.

PFC-7 Page 1-20 (1.36). We do not believe that the filling of Turkey Creek is necessary. A green belt along the stream would maintain the stream in place.

F Page 1-212, Table 1-24. Waste water effluent components expressed as long-term averages are unsatisfactory. The aquatic environment will be most effected by potential short-term maximums. Aquatic organisms, including fish, benthic invertebrates, etc., can be killed by any component or combination of components exceeding the lethal limit for a short period of time even though the long-term average is well below the lethal limits.

PFC-9 Page 1-261 and 1-263. Because the relocation of Turkey Creek is unacceptable we must object to any disposal area using any part of the Turkey Creek ravine.

PFC-10 Page 1-267 (1.345). The diversion of Turkey Creek and filling of existing stream bed is unacceptable.

PFC-11 Page 1-271 (1.346). Mean intake velocity means little; maximum intake velocity of 6.55 feet/second could cause excessive and very undesirable entrainment and impingement.

PFC-12 Page 1-274 (1.349). The fill and diversion of Turkey Creek is unacceptable.

PFC-13 Page 1-364(g)(1.461). Section 404 gives EPA authority to restrict fill which would damage fish habitat (including spawning and rearing areas). The fill required to divert Turkey Creek into a diversion channel will certainly damage, in fact eliminate, fish habitat. We believe EPA and the COE will be delinquent in their responsibilities if this habitat destruction is permitted.

PFC-14 Page 1-373(1.466). U.S. Steel has not followed Title 25, Chapter 102 in the placing of culverts already installed. What assurance have we that they will do any better in building the plant?

Volume 2

PFC-15 Page 1010 (2.781). There is some indication that Pennsylvania waters of Lake Erie have improved during recent years. In this whole draft environmental impact statement there is nothing on the eastern basin which, because of prevailing currents, could be the recipient of possible pollutants from the proposed U.S. Steel plant. It would be very desirable to have some stations further east in Lake Erie.

PFC-16 Page 1022 (2.788). Commercial fishery should be expressed in catch per unit effort rather than total catch. There is much less effort being expended to catch the commercially available species now than in the past.

PFC-17 Page 1025 (2.791). New York and part of the Pennsylvania waters are not in the Central Basin but in the Eastern Basin. Pennsylvania has a small section of the Central Basin.

PFC-18 Page 1034 (2.794). There apparently is a line (or lines) missing at line 18 or 19 of this paragraph.

PFC-19 Page 4-584 (4.494). The adverse impacts associated with placing Turkey Creek into a ditch are completely unacceptable.

PFC-20 Page 4-586 (495). U.S. Steel has not implemented an effective erosion control plan in the culvert construction already completed.

PFC-21 Page 4-589 (4.501). There are so many parts to such a large complex that abnormal spills can almost be expected. There should be information on possible emergency procedures for the various possible major catastrophies.

PFC-22 Page 4-589 (4.502) to 4-634 (4.542). The use of "averages" means little to living organisms who live or die according to maximums or minimums within a relatively short period of time. Or what about long term effects--one year or more--of these pollutants on some stage of the life cycle of the aquatic organisms, such as reproduction, egg survival, etc.? Each pollutant has an EPA maximum concentration, but what about the thousands of possible combinations of these individual elements or compounds?

PFC-23 Page 4-682 (4.574). The undetermined water quality of runoff from solid waste disposal areas could be very detrimental to the receiving waterway and means of preventing or treating this runoff must be planned in advance.

PFC-24 Page 4-693 (4.585). Since roof runoff could be significantly polluted, it should not be allowed to be discharged untreated to Lake Erie. Some type of collection and treatment system for roof runoff should be required.

PFC-25 Page 4-768 (4.668). "Once Turkey Creek is diverted into a drainage ditch;.." Is this an accepted conclusion, that Turkey Creek will be diverted?

PFC-26 Page 4-775 (4.684) to Page 4-783 (4.695). Since diversion of Turkey Creek is totally unacceptable, the resulting habitat destruction is unacceptable.

PFC-27 Page 4-785 (4.699). Impingement and entrainment could have a serious effect on fish stocks as the intake is in a nursery area.

PFC-28 Page 4-791 (4.708). Not only the location but the design of the intake should be reevaluated. More study should be made on the vertical distribution of organisms, particularly fish, to see if raising the intake for example, might lessen entrainment.

PFC-29 Page 4-792 (4.709). Gill netting does not necessarily give relative abundance of fish species as some species, particularly smallmouth bass, will avoid nets. So the figures given are relative abundance in the small sample, not necessarily relative abundance at the thirty foot contour.

PFC-30 Page 6-63 (6.92). If Turkey Creek were to be relocated, the relocation should be completed before the plant or fill begins. Once channelized to Conneaut Creek, the relocated channel might be delayed or even cancelled.

PFC-31 Page 6-68 (6.107-6.113). If properly accomplished, a green belt along Turkey Creek could preserve the existing aquatic biota.

PFC-32 However, U.S. Steel is apparently unwilling to accept either the eastward relocation or the green belt concept. The Pennsylvania Fish Comaission is unwilling to accept the channelization to Conneaut Creek. Perhaps there are other alternatives that should be studied and considered.

Summary

The Pennsylvania Fish Commission is completely opposed to diverting Turkey Creek into a ditch to Conneaut Creek. Therefore, any part of the draft environmental impact statement which pertains to this ditching of Turkey Creek is unacceptable.

PFC-33 The material pertaining to fish is in general inadequate as no attempt was made to estimate population sizes. To determine what impact a particular
PFC-34 action is going to have, it is necessary to determine the population size to be impacted, not just the species composition. Unless the limitation or gear types

are realized and accounted for in some manner, the fish collected should not even be used to show relative abundances of the species collected. Using a one year study to say anything about reproductive success can be misleading. Attempting to say much about the fish populations in Lake Erie with less than a four or five year intensive study is basically guess work and therefore very inadequate.

The section on alternatives is very unsatisfactory. In fact, there are no real alternatives given. When a so-called alternative is given and then U.S. Steel says that this "alternative" cannot be used, it is not really an alternative. Webster defines alternative as "offering or expressing a choice". If only one way is acceptable to U.S. Steel, there is nothing presented from which to choose.

PFC-35

It is the opinion of the Pennsylvania Fish Commission that the Draft Environmental Impact Statement as presented is inadequate and should not be accepted until a study of the proper magnitude is conducted which will show with some degree of confidence the real impact, adverse or otherwise, of the proposed huge industrial complex. To approve this document and allow U.S. Steel to proceed could prove disastrous for the aquatic communities involved. The present aquatic communities, streams and lake, are providing sport and commercial (lake) fisheries. These fisheries deserve to be and should be protected. From the material presented, it cannot be determined if they will be protected adequately.

PFC-36

An environmental impact statement is supposed to present sufficient reliable information from which a decision with some degree of confidence can be made. We do not believe that this document fulfills this requirement.

Report prepared by:

Jack G. Miller, Chief
Fisheries Environmental Services
Pennsylvania Fish Commission

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LAND MANAGEMENT 787-6618
REAL ESTATE 787-6886

Colonel Daniel D. Ludwig
District Engineer
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

In re: Pennsylvania Game Commission's Review and Evaluation of the Draft Environmental Impact Statement for Proposed United States Steel Lakefront Plant Site, Ashtabula County, Ohio, and Erie County, Pennsylvania

Dear Colonel Ludwig:

The attached report details the Commission's reaction to the Draft Environmental Impact Statement concerning United States Steel's proposed Lakefront Plant site.

We have made an effort to be brief and have concentrated on what we felt were substantive matters which need clarification or correction before a meaningful evaluation of the wildlife losses resulting from the plant site development can be measured.

The intensive on-site development that is anticipated on some 1200 or more acres of what is presently undeveloped land represents a significant and irreversible loss to the wildlife populations and related ecosystems of the region. In light of the potential magnitude of these losses, it is our opinion that the Draft Statement is inadequate in the areas of identifying and presenting the data needed to accurately measure this impact.

Colonel Daniel D. Ludwig

September 8, 1978

As in the past, we offer our cooperation and assistance in any reasonable fashion in an effort to develop the information necessary to supplement the Draft Statement and to make it possible to arrive at acceptable and meaningful mitigative measures.

Very truly yours,

Glenn L. Bowers

Glenn L. Bowers
Executive Director

Attachment

PENNSYLVANIA GAME COMMISSION
ENVIRONMENTAL IMPACT REVIEW REPORT

Prepared by: J. Hugh Palmer, Game Management Division, Pennsylvania Game Commission, September 1, 1978

Project: Proposed United States Steel Lakefront Plant Site, Ashtabula County, Ohio, and Erie County, Pennsylvania

Scope: Review of U. S. Army Corps of Engineers Draft Environmental Impact Statement

Investigators: J. Hugh Palmer, Biologist, Game Management Division
John J. Kriz, Biologist, Game Management Division

Introduction

On February 22, 1978, the Game Commission submitted its review of appropriate sections of the Environmental Impact Assessment, along with pertinent data on existing wildlife resources, to the Buffalo District, Corps of Engineers. This report detailed, in our opinion, many deficiencies of the E.I.A. While some of these deficiencies have been corrected in the draft E.I.S., many still remain and are discussed in this report.

Species Affected

Table 2.399 (page 1003) lists 27 species of mammals as being collected on the Lakefront site. Apparently, this should be worded as collected or observed as it states only 24 species were collected, and it is doubtful species such as white-tailed deer and beaver were actually collected. Although it indicates the most prominent species, there are reasons to believe this list is neither complete nor accurate.

PGC-1 For example, the only species of bat listed is the Keen bat (Myotis keenii). The presence of this species is somewhat surprising, as it is an uncommon species of cave bat, and its identification is open to question as it is almost indistinguishable from the little brown bat (Myotis lucifugus) which is the most common bat in Pennsylvania. The adequacy of the sampling technique can also be questioned when such common species as the little brown, big brown and red bats are not reported.

PGC-2 Since no specific details of the sampling techniques are presented in the draft E.I.S., its potential effectiveness cannot be evaluated. However, as there is the reasonable probability of finding upwards of 45 mammal species on the project area, a listing of only 27 is indicative of inadequate sampling. Existing mammal survey data should be reviewed and additional field surveys contemplated to insure the accuracy and completeness of this table. We recommend Mammals of Pennsylvania (Doutt, et al, 1966) as a reference text.

Table 2.398 (page 2.985) does provide an adequate listing of the bird species that are found on the project area.

PGC-3 On page 2.3.3.1-4 of the draft Environmental Impact Assessment, prepared by Arthur D. Little, Inc., the statement is made, the consultant has reason to feel the

Indiana bat (Myotis sodalis) is reasonably likely to occur on the project area. The Indiana bat is classified as an endangered species on the U. S. Fish and Wildlife listing of endangered and threatened wildlife. Paragraph 2.924 of the draft E.I.S. states this species could possibly occur on the project area but has not been reported in recent years and is listed as reasonably likely to occur in paragraph 2.926. The possibility of this endangered species being present has thus been raised, but we are not aware of any efforts on the part of U. S. Steel, its consultants or the Corps of Engineers to accurately determine its status. Such an effort should be undertaken, especially since the identification of bat species cannot be readily made through normal field observations.

Interference with Commission Lands

This project will not directly impact any lands owned or leased by the Game Commission.

Reduction in Wildlife Habitat

Paragraph 3 of the "primary facility related impacts" section of the summary (page iii) states, construction of the Lakefront plant would involve the alteration of approximately 1290 acres of the 2760 acres comprising the project site. No development is planned for the remaining 1470 acres.

Paragraph 1.354 indicates 1290 acres would be altered during plant construction and that during plant operations, several hundred additional acres would be cleared and converted for solid waste disposal.

Table 2 - 295 (page 2-618) lists vegetative and land use acreages as trees - 2199 acres, shrubs - 2385 acres, herbs - 315 acres and developed - 533 acres for a total project area of 5442 acres.

PGC-4 Paragraph 6.18 (page 6-13) indicates approximately 1800 acres, exclusive of existing and proposed raw materials handling facilities, would be developed at the Lakefront site.

Subsequent to the release of the draft E.I.S., representatives of U. S. Steel have stated almost all the project area would be impacted during future plant expansion.

From these conflicting statements and data, it is not possible to determine either the total area of land or the total amount of wildlife habitat to be impacted during plant construction or operation. Such information is necessary as the basis for determining existing wildlife resources and the degree of impact and should be presented including a designation of the areas and locations for each state.

PGC-5 Figure 2-136 (page 2-965) shows vegetation types and biotic communities of the proposed project site. This figure and Figure 2-135 (page 2-962) indicate the locations of nine terrestrial biotic community study areas. Tables 2-394 (page 2-966) and 2-395 (page 2-967) contain supporting data and paragraphs 2.744 and 2.748-2.753 are explanatory text. All this should be adequate to accurately identify and describe the vegetative types and biotic communities. However, due to many contradictions and much confusion, it does not.

PGC-6 Different terminology is used to describe cover types in paragraph 2.744 than is used in the key on Figure 2-136, and there is no clear definition given of either. The same holds true for the "negative"? community descriptions in Table 2-39.

Study area 4 is listed as intermediate old field grass-goldenrod-wild carrot association. It is actually an early old field-grasses-aspen-willow-cattail-phragmites association.

Study area 5 is shown in Figure 2-136 as being in the grass and forbs stage. It actually contains low, sparse and bushy shrubs in addition. Paragraph 2.750 states silky dogwood is scarce here; it is actually quite abundant.

Paragraph 2.752 fails to list aspen as a subdominant for study area 9 while actually it is. Then it goes on to discuss the presence and value of this species.

While the vegetative analysis seems basically to have been well done, conflicting presentations as illustrated above, raise questions as to its accuracy and validity.

PGC-7 Figure 2-137 (page 2-963) is listed as indicating environmentally sensitive areas on the proposed project site. The Game Commission's field surveys show the area indicated in the draft E.I.S. as "important mamal (sic) habitat" and "important game bird habitat" (neither term defined), are grossly inaccurate. The indicated mammal habitat excludes most of the white-tailed deer and fox squirrel habitat. The indicated game bird habitat excludes major sections of ruffed grouse habitat. In addition, this map conflicts with the descriptions of the bird and mammal usage of the nine terrestrial biotic community study areas listed in paragraphs 2.748-2.753.

Figure 2-141 (page 1006) indicates woodcock and snipe nesting areas on the proposed project site. Our field surveys indicate the woodcock areas are illustrated in a very general way. From the material presented, it is easy to assume this map was developed from field investigations made by the consultant. We have reason to believe it indicates the general region identified by the district game protector to the consultant for further study.

As a result of factors such as those discussed above, the draft E.I.S. fails to identify the types and amounts of wildlife habitat to be adversely impacted by development of the Lakefront site. This situation must be corrected.

PGC-8 First, a uniform method for describing vegetative types should be developed and clearly defined. Next, the vegetation type map should be field checked for accuracy and uniformity, modified as necessary and reproduced in sufficient scale to allow accurate area determination and analysis.

Next, the proposed plant layout (or layouts) including all on-site solid waste disposal proposals should be superimposed on the vegetative map and the areas and types of the impacted portions tabulated. Tabulation should permit identification of the impacted areas in each state.

Reduction in Wildlife Populations

PGC-9 Existing wildlife population levels must be determined on an actual or relative basis prior to calculating the degree of reduction.

Table 2-398 (page 2-985) indicates relative abundance of bird species on the project area. The accuracy of these ratings does not appear adequate in many cases. For example, woodcock are listed as "common", while some gull species, flickers and red-breasted mergansers are listed as "abundant". In actuality, woodcock population levels are significantly greater than those of the other three species. Also, the significance of the terms used to describe relative abundance are not defined nor is it clear whether these are terms developed by the Audubon Society, A.O.U. or by the consultant. The bird census routes shown in Figure 2-139 (page 1004) and Figure 2-140 (page 1005) do not appear adequate to properly determine abundance of waterfowl and other aquatic and wetland species.

PGC -10

Paragraph 2.774 (page 2-984) states that mammals were collected along designated transects so population estimates could be made. However, no population estimates are included.

PGC -11

Paragraphs 2.775-2.779 (pages 2-984 to 1010) detail the major game species on the area. This listing includes beaver and red and gray foxes. It omits two important game species, the ruffed grouse and the fox squirrel. Such errors indicate an inadequate knowledge of the wildlife of the project area.

PGC -12

Prior to the initiation of the consultants' study, woodcock were identified as the most significant wildlife species present, and extensive studies by the consultants were anticipated. Such studies should have included breeding season population studies, nesting studies and fall population studies.

The U. S. Fish and Wildlife singing ground survey is the established technique for conducting a woodcock breeding season census. This method gives a relative, not actual, population density value. Due to uniform procedure, results from routes throughout the country can be compared and evaluated.

PGC -13

The consultants used a technique apparently of their own design, the result of which are meaningless (Table 2-400A, page 1007). The nesting study is at best inadequate, and the fall population study is nonexistent.

The Game Commission did conduct singing ground surveys and fall flushing studies both on and off the project area. These data are presented in Table 2-4006 (page 1007) and Table 2-401 (page 1008). These were designed as baseline studies to supplement those of the consultant. While providing more information than obtained from the consultants' studies, they are still not adequate to properly evaluate the area's woodcock populations.

Paragraph 4.185 (page 4-208) indicates wildlife displaced by plant construction would migrate to other areas and possibly be added to these off-site populations. This is a false assumption. As wildlife populations usually exist at carrying capacity, the displaced populations would cause increases above carrying capacity. Natural mortality factors will reduce these to carrying capacity, thus effectively and permanently destroying the displaced populations.

PGC -14

Paragraphs 4.619 through 4.638 (pages 4-733 to 4-738) deal with impacts on the terrestrial biota. They state in very general terms that plant construction would destroy wildlife habitat and wildlife populations. Given the lack of a proper assessment of existing wildlife resources, the superficiality of these comments is understandable. It is also unacceptable in dealing with impacts of this potential magnitude.

PGC -15

- 4 -

The draft E.I.S. does not present any useful determination of either actual or relative population levels of the wildlife species present on the project area and, therefore, does not measure the reductions that would result from plant construction.

These deficiencies can be corrected in several ways. First, data from the Game Commission's Environmental Impact Review Manual (Palmer, 1977) can be utilized to calculate population levels for white-tailed deer, cottontail rabbits, fox squirrels and ruffed grouse. (This information has already been supplied to A. D. Little and the Corps of Engineers.)

PGC -16

For other mammalian species, equivalent population tables (Mohr, 1947) can be used to approximate population levels.

Rechecking of avian survey data should allow determination of relative population levels for many bird species. Additional field investigations will be needed on woodcock.

Reduction in Wildlife Related Recreation

Hunting in Pennsylvania is a major form of outdoor recreation and a major revenue source. Over one million Pennsylvania residents hunt, spending over $250,000,000 annually in pursuit of their sport. In 1976, over 35,000 residents of Erie County purchased hunting licenses and spent an estimated $8,750,000 on hunting and hunting-related activities.

Paragraphs 2.269 through 2.278 (pages 2-323 to 2-340) discuss existing recreational facilities in Pennsylvania. No data are presented regarding hunting opportunity provided by the proposed plant site and only cursory mention is made of hunting activity throughout the region.

PGC -17

Paragraph 4.185 (page 4-208) indicates successful hunting will not be possible on the developed plant site.

This information is inadequate to determine hunting opportunity provided by the project area and the loss that would result from its development.

Such information can be developed from information on the economic aspects of hunting in Pennsylvania (Hartman, 1973) and from hunting activity and economic data in the Environmental Impact Review Manual. Figures on loss of hunting man-days and revenue reductions should be included.

Mitigation of Unavoidable Impacts and Alternative Development

The filling of Turkey Creek and the construction of a diversion channel is unacceptable to the Game Commission. We have already stated our objections to this proposed action and explained our reasons in detail. These are on file with the Buffalo District, U. S. Army Corps of Engineers, so we will not reiterate them at this time.

The relocation of Turkey Creek is discussed on pages 6-63 to 6-68. As described in paragraph 6.91, 33,000 feet of channel would be filled while 14,000 feet of relocated channel would be constructed for a net loss of 17,000 feet of channel. According to the initial relocation proposal as developed by D'Appolonia Associates, net

PGC -18

- 5 -

loss in channel length would be 10,000 feet. We are concerned that this additional 7,000 foot loss now proposed would present problems in obtaining proper stream gradient and flow characteristics.

The relocated channel will require proper stabilization and detailed plans for doing so should be supplied. The information supplied in paragraph 6.93 is inadequate.

PGC -19 Detailed riparian revegetation plans should be developed and presented. The material in paragraph 6.95 is totally inadequate in our opinion.

PGC -20 Paragraph 6.106 states the applicant has studied the proposed alternative, finds that the costs generally outweigh the questionable benefits and decided not to give it further consideration. Part of the E.I.S. process is the evaluation of feasible alternatives. This unilateral action by the applicant is at best inappropriate in light of the interest shown in this proposal by the Game Commission and other review agencies and specific requests for a detailed development of this concept.

PGC -21 Paragraphs 6.107 through 6.113 (pages 6-68 and 6-69) discuss a possible setback of plant structures to preserve existing Turkey Creek and some of the adjoining terrestrial habitat. Here again, the proposal is discussed in insufficient detail, and the applicant has made another unilateral decision not to investigate it further. We cannot see the logical reason for any culverting or filling as discussed in paragraph 6.109.

PGC -22 Paragraphs 5.92 through 5.99 (pages 5-34 to 5-37) discuss unavoidable impacts on the terrestrial biotic environment. This discussion is extremely superficial, both in describing the impacts and detailing mitigation and replacement procedures. It does not present any material useful to the Game Commission in evaluating these factors.

PGC -23 Paragraphs 1.334 through 1.343 (pages 1-261 to 1-263) describes potential solid waste disposal areas. Such sites can be reclaimed to provide wildlife habitat, but no detailed proposals for doing so are included in the draft E.I.S.

PGC -24 Alternatives to the filling of Turkey Creek and construction of a diversion channel to Conneaut Creek are needed to overcome Game Commission objections and recommendations against issuance of the necessary Corps of Engineers' 404 permits. They must be presented in sufficient detail to allow proper evaluation.

Unavoidable impacts must be properly identified and detailed mitigation plans developed.

Secondary Impacts

PGC -25 Secondary impacts on wildlife are briefly described in paragraphs 4.208 (page 4-217) and 4.666 (page 4-767). These presentations are too superficial to permit any meaningful evaluation.

PGC -26 The Game Commission is quite concerned about the numerous questions that have been raised regarding the accuracy of human population projections contained in the draft E.I.S. A significant population increase would present several areas of concern.

First, land requirements for housing and support facilities would significantly impact many wildlife areas. Increase in number of hunters would increase demands for hunting opportunity. Increased interaction between wildlife and people would increase complaint and service calls for district and deputy game protectors.

Accurate human population projections are needed to enable the Commission to accordingly adjust its programs to meet local demands.

Miscellaneous Issues

Numerous inaccuracies and shortcomings not under the major headings previously discussed were noted throughout the draft E.I.S. It is not within the scope of this review to comment on these in detail. We will discuss a few for illustrative purposes.

PGC -27 Paragraph 2.730 (page 2-948) discusses forested areas in Erie County based on 1954 data which indicates 130,000 acres were wooded. Soil Conservation Service land use inventory data from 1967 indicates 189,777 acres were forested land. Even more current data are available from Bureau of Forestry, Pennsylvania Department of Environmental Resources. The use of such dated material is unwarranted.

PGC -28 Figure 2-134 (page2-955) is a map of environmentally-sensitive areas in Erie and Crawford Counties. The Turkey Creek drainage is not included. Paragraph 2.736 (page 2-954) states this map shows significant wetlands. In view of the importance assigned to Turkey Creek by the draft E.I.S. and the review agencies, this appears to be a significant omission.

PGC -29 Table 2-391 (page 2-956) presents Pymatuning waterfowl data. Since the text fails to relate this material to the project area, and Pymatuning would not be impacted by this project, there is no significance to this material and no apparent reason for its inclusion.

PGC -30 Beginning on page A-1, predraft E.I.S. coordination letters and responses are reproduced. None of the predraft correspondence from the Game Commission is included.

Comments, Conclusions and Recommendations

It is our opinion that the Corps of Engineers' draft Environmental Impact Statement for the proposed U. S. Steel Lakefront plant fails to properly identify the wildlife resources of the project area and the amounts and types of habitat to be impacted. It fails to effectively detail direct impacts and provide acceptable alternatives. It fails to present effective mitigation and replacement programs.

Based on these factors, the Game Commission finds this E.I.S. to be incomplete, inaccurate and unacceptable in its presentation of the wildlife-related issues. Extensive revision, including additional field investigations will be needed to correct these deficiencies.

Throughout this review, we have included suggestions for affecting some of these revisions. We also make the following major recommendations.

The procedure for assessing existing wildlife resources and potential impacts are straightforward and well developed. The methodology used in the draft is often

poorly organized, confusing and ineffective. The methodology should be modified to eliminate these shortcomings.

The revised material for the final E.I.S. should be checked by the appropriate review agencies to insure the major shortcomings are overcome prior to the preparation of the final statement.

As soon as practicable, the Corps of Engineers should prepare a suitable vegetation map of the project area delineating the impacted areas. This map should be distributed to the appropriate review agencies.

PGC -31

Next, the Corps of Engineers, U. S. Fish and Wildlife Service, Pennsylvania Fish Commission, Game Commission and representatives of U. S. Steel and additional concerned review agencies should conduct a survey of the wildlife resources and impact effects on the project area. Such an evaluation should be made in accordance with current Fish and Wildlife procedures. This would provide an accurate assessment of these factors and develop interagency concurrence on the technology and results. Alternative proposals, plus mitigation and replacement lands should be included in this survey.

This information would then serve as the basis for review agency-applicant-Corps of Engineers development of acceptable mitigation and replacement programs and alternative courses of action.

Until such revisions are affected, the Game Commission will maintain its position opposing issuance of the Corps of Engineers' 404 permits.

References

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August 17, 1978

District Engineer
ATTN: Regulatory Functions Branch
U.S. Army Engineer District
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

We have reviewed the draft environmental impact statement on the Permit Application by United States Steel Corporation for the Proposed Lake Front Steel Mill, Conneaut, Ohio. We are responding on behalf of the Public Health Service.

We have the following specific comments:

a. In Chapter 4, Working Paper VI, the projected health requirements for acute and chronic health services delivery are discussed. The projected needs in the communities of public health or preventive medical services are not presented.

PHS-1

b. Chapter 4, Working Paper X notes that the average county public health workers per 1,000 population in Ohio is 65 percent of the national average. Projected needs are not discussed.

Thank you for the opportunity of reviewing this document. We would appreciate receiving two copies of the final statement when it is issued.

Sincerely yours,

William H. Foege, M.D.
Assistant Surgeon General
Director

RICHARD G. BECK
848 WEST 51ST STREET
ERIE, PENNSYLVANIA 16509

COLONEL DANIEL D. LUDWIG
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

DEAR COLONEL LUDWIG:

OVER THE NEXT SEVERAL MONTHS YOU AND YOUR STAFF WILL BE FLOODED WITH FACTS, STATISTICS AND GENERAL INFORMATION CONCERNING THE PROPOSED CONSTRUCTION OF THE GREENFIELD STEEL MILL ON THE OHIO-PENNSYLVANIA BORDER. I HAVE BEEN FOLLOWING THE DEVELOPMENTS CLOSELY AND HAVE ATTENDED THE LAST TWO PUBLIC HEARINGS HELD IN ASTABULA AND SPRINGFIELD. I WOULD LIKE TO TAKE THIS OPPORTUNITY TO COMMENT ON SEVERAL POINTS CONCERNING BOTH THE INITIAL IMPACT AS WELL AS THE LONG TERM RAMIFICATIONS OF CONSTRUCTION OF THE PROPOSED MILL.

I WOULD FIRST LIKE TO DRAW AN ANALOGY BETWEEN THE PROCESS USED BY THE MILITARY WHEN DECIDING WHICH INDIVIDUALS SHOULD BE INCLUDED IN A PROMOTION AND THE DECISION PROCESS WHICH YOU WILL EMPLOY TO DETERMINE WHETHER OR NOT TO PERMIT CONSTRUCTION OF THE PROPOSED STEEL MILL. ONE OF THE BEST INDICATORS OF HOW A CERTAIN INDIVIDUAL CAN BE EXPECTED TO PERFORM IN A NEW POSITION IS HIS PAST RECORD OF ACHIEVEMENT. AS I UNDERSTAND IT, PROMOTIONS ARE GIVEN IN THE MILITARY BASED ON AN INDIVIDUALS PAST WORK RECORD. WERE YOU IN THE POSITION TO DECIDE WHETHER OR NOT TO PROMOTE A PARTICULAR INDIVIDUAL, YOU WOULD UNDOUBTEDLY EXAMINE HIS PAST PERFORMANCE RECORD CLOSELY. IF YOU FOUND THAT IN 17 OUT OF HIS PAST 20 ASSIGNMENTS HE HAD WILLFULLY VIOLATED MILITARY LAW AND HAD FOUGHT TO CONTINUE THESE VIOLATIONS EVEN AFTER MILITARY AUTHORITIES HAD ORDERED HIM TO STOP, COULD YOU IN GOOD CONSCIENCE PROMOTE THIS INDIVIDUAL TO A POSITION MORE POWERFUL THAN HE HAD

EVER HELD PREVIOUSLY? ONLY YOU KNOW THE ANSWER. IN REALITY, YOU ARE FACED WITH THE DECISION OF WHETHER OR NOT TO ALLOW A CORPORATION WHICH IS IN VIOLATION OF EXISTING FEDERAL AND STATE POLLUTION LAWS AT 17 OUT OF 20 OF ITS MAJOR FACILITIES TO CONSTRUCT THE LARGEST STEEL-MAKING FACILITY IN THE WORLD IN A PRIME AGRICULTURAL AREA ON THE SHORE OF A LAKE WHICH IS JUST NOW BEGINNING TO REFLECT THE EFFORTS OF A MAJOR CLEAN-UP OPERATION. I WOULD CAUTION YOU TO EXAMINE CAREFULLY THE PLANS SET FORTH BY U.S. STEEL, FOR THEY HAVE NOT LIVED UP TO THEIR EXPECTATIONS IN THE PAST AND THEY ARE NOT LIVING UP TO THEM NOW.

THE PROPOSED CONSTRUCTION SIGHT FRONTS LAKE ERIE, ONE OF THE FIVE LARGEST BODIES OF FRESH WATER FOUND IN THE ENTIRE WORLD. LAKE ERIE HAS SUFFERED SEVERELY IN THE PAST FROM EXCESSIVE POLLUTION, BUT THANKS TO A CONCERTED EFFORT ON

THE PART OF STATE AND FEDERAL AUTHORITIES THE LAKE IS MAKING A GOOD COMEBACK. THESE GOVERNMENTS ARE SPENDING MILLIONS AND MILLIONS OF DOLLARS IN TAXPAYERS MONEY TO BUILD AND EXPAND WASTE TREATMENT FACILITIES, AND THE E.P.A. IS FORCING COMPLIANCE IN THE PRIVATE SECTOR TO INSURE IMPROVED WATER QUALITY. I THEREFORE QUESTION THE LOGIC OF ALLOWING U.S. STEEL TO DUMP A MINIMUM OF APPROXIMATELY 180 TONS OF WASTE INTO THE LAKE EACH DAY. THE EFFECTS OF SUCH DUMPING OVER A PERIOD OF FIVE YEARS IS NOT ACCURATELY PREDICTABLE, LEAVING SERIOUS QUESTIONS AS TO THE EXTENT OF THESE AFFECTS OVER A LONG PERIOD OF TIME, SAY 50 YEARS. THIS ASSUMES THAT THE PLANTS TREATMENT FACILITIES ARE AS EFFECTIVE AS THE COMPANY CLAIMS AND THAT THEY WILL NOT DETERIORATE AND ALLOW A GREATER AMOUNT OF POLLUTANTS TO FLOW INTO THE LAKE. THE COMPANY'S PAST

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RECORD MAKES ME VERY SCEPTICAL OF THEIR FUTURE PERFORMANCE.

ALTHOUGH U.S. STEEL, ALONG WITH ALL OTHER PRO-MILL FACTIONS, CONTEND THAT ALL FEDERAL POLLUTION STANDARDS WILL BE MET (INITIALLY, AT LEAST), OUR FEDERAL LAWS DO NOT YET REGULATE ALL FORMS OF POLLUTION NOR ALL VARIOUS TYPES OF POLLUTANTS, AND MANY OF THOSE WHICH ARE REGULATED CAN CAUSE SERIOUS ENVIRONMENTAL DAMAGE EVEN WHEN RELEASED IN AMOUNTS WHICH ARE UNDER THE FEDERAL LIMITS. ONE CASE IN POINT IS THE TEMPERATURE OF THE EFFLUENT TO BE DISCHARGED BY THE PROPOSED PLANT. ACCORDING TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT, WATER TEMPERATURE IN LAKE ERIE WOULD RISE FROM 2° TO 10° DURING THE WARM SUMMER MONTHS AND AS MUCH AS 19° DURING THE WINTER (ASSUMING THESE FIGURES ARE REALISTIC). HAVING JUST RECIEVED MY MASTERS DEGREE FROM THE UNIVERSITY OF PITTSBURGH WHERE I HAVE TAUGHT FRESHMAN BIOLOGY COURSES DEALING IN PART WITH ENVIRONMENTAL

(6)

AND ECOLOGICAL PROBLEMS, I CAN ACCURATELY PREDICT THAT LAKE ERIE WILL BE SEVERELY AFFECTED AND RADICALLY CHANGED FROM THE ADDITION OF THIS EXCESS HEAT.

ONE RESULT WILL BE THE TOTAL ELIMINATION OF VARIOUS SPECIES OF FISH, AS WELL AS AN INCREASE IN PLANT LIFE AND THE PROLIFERATION OF MANY FORMS OF BACTERIA. A DECREASE IN FISH LIFE ACCOMPANIED BY AN INCREASE IN PLANT LIFE WILL SIGNIFICANTLY INCREASE THE BIOLOGICAL OXYGEN DEMAND ON THE LAKE CAUSING FURTHER DESTRUCTION OF THE AQUATIC HABITAT AND CREATING CONDITIONS WHICH COULD WELL LEAD TO A LIFELESS BODY OF WATER. A MONETARY VALUE CANNOT BE PLACED ON THIS ENVIRONMENTAL DAMAGE, BUT I CAN ASSURE YOU THAT THIS TYPE OF DESTRUCTION OF HABITAT WILL HAVE NEGATIVE LONG-TERM AFFECTS.

MAJOR CHANGES IN THE AQUATIC ENVIRONMENT COULD SEVERELY ALTER THE ECOLOGICAL CONDITIONS ON PRESQUE ISLE STATE PARK; A PENINSULA DESIGNATED BY THE

B3-3

FEDERAL GOUERNMENT AS A REGISTERED NATIONAL LANDMARK WHICH JUTS OUT SEVERAL MILES INTO LAKE ERIE APPROXIMATELY 20 MILES EAST OF THE CONSTRUCTION SITE. THE PARK IS NOTED AS ONE OF THE LARGEST BIRD SANCTUARIES ON THE GREAT LAKES. HUNDREDS OF THOUSANDS OF BIRDS STOP AT THE PARK ALONG THEIR ANNUAL MIGRATION ROUTES, WHILE THOUSANDS MORE NEST ON THE PARK DURING THE SUMMER. SOME OF THESE SPECIES OF BIRDS INCLUDE FISH IN THEIR DIET, AND VIRTUALLY ALL OF THE BIRDS USE THE LAKE AS A WATER SUPPLY. BIRD POPULATIONS WOULD BE AFFECTED BY A DETERIORATION OF THE QUALITY OF THE WATER, NOT TO MENTION THE POSSIBLE AFFECT ON HUMAN LIFE IN THE AREA.

AN INCREASE OF 19° OVER THE AVERAGE WINTER WATER TEMPERATURE WILL RESULT IN A MARKED DROP IN ICE FORMATION ON THE LAKE ITSELF AS WELL AS THE FORMATION OF ICE DUNES ALONG THE LAKE SHORE. THIS PROJECTED INCREASE IN TEMPERATURE DOES NOT

RB-4

TAKE INTO ACCOUNT THE ADDITIONAL HEAT TO BE DISCHARGED FROM THE PROPOSED COHO POWER STATION NOR DOES IT CONSIDER THE IMPACT OF ADDITIONAL DEVELOPMENT WHICH WILL RESULT FROM CONSTRUCTION OF THE MILL. THE FORMATION OF ICE DUNES ALONG THE LAKE SHORE, INCLUDING THE SHORES OF PRESQUE ISLE, ARE INSTRUMENTAL IN PREVENTING SUBSTANTIAL EROSION OF THE SHORELINE DURING THE SEVERE STORMS WHICH OCCUR YEARLY DURING THE LONG WINTER MONTHS. AS A SUMMER EMPLOYEE OF PRESQUE ISLE STATE PARK, I AM WELL AWARE OF THE LARGE SUMS OF MONEY SPENT ON EROSION CONTROL PROJECTS AT THE PARK EACH YEAR BY THE TAXPAYING PUBLIC THROUGH FEDERAL AGENCIES LIKE THE ARMY CORPS OF ENGINEERS. ADDITIONAL EROSION RESULTING FROM CONSTRUCTION OF THE PROPOSED MILL AND RESULTING SECONDARY DEVELOPMENT WILL SERIOUSLY AND NEGATIVELY AFFECT PRESQUE ISLE AND THE ENTIRE PENNSYLVANIA SHORE LINE. THE COST OF SLOWING THIS EROSION

RB-5

(8) (9) (10)

WILL FALL DIRECTLY ON THE TAXPAYERS AND NOT ON THE FIRM WHOSE PLANT IS DIRECTLY RESPONSIBLE FOR THE PROBLEM, WITH LAKE FRONT HOMEOWNERS FACING THE MOST SERIOUS PROBLEMS.

CONTAMINATION OF THE PUBLIC WATER SUPPLY IS IN MY OPINION ONE OF THE MOST SERIOUS PROBLEMS POSED BY CONSTRUCTION OF THE PROPOSED GREENFIELD MILL. A CERTAIN AMOUNT OF ALL CHEMICALS DISCHARGED WILL FIND THEIR WAY INTO PUBLIC WATER SUPPLIES, AND THE AFFECT OF THESE CONTAMINANTS ON THE HEALTH OF LOCAL RESIDENTS IS

RB-6 IMPOSSIBLE TO PREDICT OVER A LONG PERIOD OF TIME. ONE CASE IN POINT ARE THE PHENOLS, WHICH FORM HEALTH THREATENING SUBSTANCES WHEN COMBINED WITH CHLORINE. I WISH TO UNDERSCORE THE SERIOUSNESS OF THIS PROBLEM, FOR SUCH DISCHARGES WILL THREATEN THE HEALTH OF ANY RESIDENT WHOSE WATER SUPPLY IS DRAWN FROM THE LAKE. IF THE VOLUME OF THIS DISCHARGE IS UNDERESTIMATED, ALL OF THE PROBLEMS MENTIONED THUS FAR WILL BE MAGNIFIED. THERE ARE ALSO AFFECTS WHICH ARE IMPOSSIBLE TO FORSEE BEFORE THE PLANT IS IN OPERATION, BUT WHICH WILL BE EXTREMELY DIFFICULT TO CORRECT AFTER MANUFACTURING BEGINS AT THE SITE.

MEANS DO EXIST TO ELIMINATE THESE PROBLEMS. COKE OVENS COULD BE ELIMINATED AND REPLACED BY THE ARC WELD SYSTEM OF STEELMAKING USED BY THE JAPANESE. AFTER ALL, ONE FACTOR WHICH ALLOWS THE JAPANESE

RB-7 TO BE COMPETITIVE ON INTERNATIONAL MARKETS IS THE EFFICENCY OF THEIR STEELMAKING PROCESS. ANOTHER SOLUTION WOULD BE THE CONSTRUCTION OF A SELF-CONTAINED WATER RECYCLING SYSTEM FOR THE MILL, THEREBY ELIMINATING THE CONTINUAL DISCHARGE OF HEATED AND POLLUTED WATER INTO LAKE ERIE. NATURALLY, U.S. STEEL WILL RESIST SUCH DEMANDS, SIGHTING INCREASED COST AND MAINTAINANCE AS REASONS TO AVOID INSTALATION OF A RECYCLING SYSTEM. HOWEVER, THE OVERALL COST/BENEFIT RATIO

(11)

MUST BE CONSIDERED, FOR THE INITIAL COST AND MAINTAINANCE TO U.S. STEEL IS FAR LESS THAN COST OF DEALING WITH INCREASED SHORE EROSION, ELIMINATION OF CONTAMINANTS FROM WATER SUPPLIES, INCREASED HEALTH CARE BILLS FOR LOCAL RESIDENTS, AND LOSS OF REVENUE DUE TO A GENERAL DECLINE IN TOURISM.

TOURISM IS A MAJOR INDUSTRY IN ERIE COUNTY, ACCOUNTING FOR MILLIONS AND MILLIONS OF DOLLARS ANNUALLY. THE LARGEST TOURIST ATTRACTION IN THE COUNTY IS PRESQUE ISLE STATE PARK, WHICH ATTRACTS MORE VISITORS EACH SUMMER THAN ALL OTHER PENNSYLVANIA STATE PARKS ATTRACT IN ONE YEAR. THE DESTRUCTION OF FISH AND WILDLIFE, THE EROSION OF BEACHES, AND THE GENERAL DETERIORATION OF WATER QUALITY WILL SURELY DECREASE TOURISM IN THE AREA.

SIGNIFICANT DETERIORATION IN REGIONAL AIR QUALITY IS ANOTHER MAJOR PROBLEM POSED BY CONSTRUCTION OF THE MILL.

(12)

EMISIONS WILL RESULT IN A SIGNIFICANT DROP IN AIR QUALITY, RESULTING IN SEVERE CROP DAMAGE IN ONE OF THE TWO BEST AGRICULTURAL AREAS OF PENNSYLVANIA. THE D.E.I.S. EXAMINES ONLY EMISIONS TO BE DISCHARGED FROM THE PROPOSED MILL, BUT IT DOES NOT TAKE INTO ACCOUNT EMISIONS FROM THE PROPOSED COAL POWERED COKE POWER STATION OR EMISIONS RESULTING FROM THE THOUSANDS OF ADDITIONAL CARS, TRUCKS, AND TRAINS
RB-8 NEEDED TO PROVIDE WORKERS AND MATERIALS FOR EACH STAGE OF CONSTRUCTION AND EVENTUAL OPERATION OF THESE MASSIVE PROJECTS. THE LARGE AMOUNTS OF COAL ALONE WILL ADD HUGE AMOUNTS OF COAL DUST TO THE AIR, NOT TO MENTION RUNOFF OF WATER LADEN WITH COAL DUST INTO LAKE ERIE FROM BOTH THE MILL AND THE POWER STATION.

IT SEEMS ILLOGICAL TO CONSTRUCT A HEAVY INDUSTRIAL COMPLEX IN A PRIME AGRICULTURAL AREA. THE EXISTING AGRICULTURAL AREAS OF THE WORLD TODAY ARE EVEN NOW

(13)

INCAPABLE OF SUPPLYING FOOD FOR THE WORLD'S PRESENT POPULATION. IT SEEMS VERY UNWISE TO PERMIT CONSTRUCTION OF THIS MILL IN AN AREA WHERE FAMILY FARMS ARE PROSPERING AND YIELDING SUBSTANCIAL AMOUNTS OF FOOD.

THE MAJORITY OF OUR CITIES ARE SUFFERING FROM POPULATION DECLINE, URBAN DECAY, AND HIGH UNEMPLOYMENT. CONSTRUCTION OF A MAJOR INDUSTRIAL COMPLEX IN AN AREA WITH HIGH UNEMPLOYMENT WOULD SERVE TO REVIVE AND REJUVENATE THE AREA; PROVIDING JOBS, CURBING DECAY, AND SPAWNING A NEW ERA OF REDEVELOPMENT FOR THE AREA. REMODELED AND UNUSED BUILDINGS COULD BE UTILIZED WHILE PRESERVING PRIME AGRICULTURAL LAND FOR CROP PRODUCTION. OF COURSE, POLLUTION PROBLEMS POSED BY SUCH A PLANT WOULD HAVE TO BE CORRECTED, BUT THIS TASK SHOULD NOT BE INSURMOUNTABLE FOR A NATION WHICH CLAIMS TO HOLD WORLD TECHNOLOGICAL SUPERIORITY.

U.S. STEEL SHOULD NOT BE PERMITTED TO BUILD THEIR PLANT IN AN AGRICULTURAL AREA SIMPLY BECAUSE THE AIR AND WATER

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ARE CLEANER AND THEY CAN THEREFORE ABSORB MORE POLLUTION THAN OTHER MORE HEAVILY POPULATED AREAS. OUR GOAL SHOULD BE THE ELIMINATION OF POLLUTION, NOT THE DISTRIBUTION OF IT. ANY MAJOR CITY WITHIN 200 MILES OF THE PROPOSED SITE IS SUFFERING FROM THE PROBLEMS JUST DISCUSSED. WE SHOULD LOOK TO THE FUTURE AND BEGIN NOW TO REBUILD AND REVIVE OUR CITIES AND PRESERVE OUR AGRICULTURAL LAND.

I AM WELL AWARE OF THE FACT THAT U.S. STEEL ALREADY OWNS THE LAND IN QUESTION. THEY ALSO OWN THE CONNEAUT DOCK COMPANY AND THE BESSEMER AND LAKE ERIE RAILROAD, BOTH OF WHICH WOULD SERVE THE NEW PLANT. HOWEVER, BOTH FIRMS HAVE BEEN OPERATING PROFITABLY AND WILL CONTINUE TO OPERATE WHETHER OR NOT THE MILL IS BUILT THERE. THE LAND FOR THE PROPOSED MILL COULD BE SOLD AND THE MONEY USED TO PURCHASE LAND IN AN AREA MORE CONDUCIVE TO INDUSTRIAL DEVELOPMENT.

RB-9

(13)

ALLOWING THE PLANT TO BE CONSTRUCTED IN THE AREA NOW DESIGNATED WILL ADD TO URBAN AS WELL AS RURAL DECAY, FOR EXISTING U.S. STEEL PLANTS WILL BE CLOSED IN PITTSBURGH AND YOUNGSTOWN AND THE NEW MILL WILL PROVIDE ONLY ONE NEW JOB FOR EVERY THREE ELIMINATED ELSEWHERE. THE EMPLOYMENT BOOM SEEMS UNLIKELY WHEN ALL FACTORS ARE CONSIDERED.

PLEASE CONSIDER THE POINTS I HAVE MADE HERE. I FEEL THESE VIEWS ARE BOTH REALISTIC AND JUSTIFIABLE. UNFORTUNATELY, I DO NOT HAVE THE TIME OR MONEY NECESSARY TO RESEARCH EACH ASPECT OF THESE PROBLEMS IN GREAT DEPTH, BUT MY VIEWS ARE SHARED WITH MANY AREA RESIDENTS AND WE FEEL THAT FURTHER RESEARCH WILL VERIFY THESE CLAIMS.

THANK YOU.

SINCERELY,
Richard G. Beck
RICHARD G. BECK

A-165

THE DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER
BUFFALO DISTRICT
1776 NIAGARA DISTRICT
BUFFALO, NEW YORK 14207

September 7, 1978

Gentlemen:

I am writing this letter to you as a concerned resident of Erie, PA regarding the proposed steel plant to be built in Conneaut, Ohio.

RJM-1 My concern is primarily pertaining to the effect that the steel plant will have on Presque Isle State Park. This park, as I'm sure you're well aware, receives millions of visitors each year. It is an ecological reservation which provides immeasurable happiness to the visitors who flood here each year. I would venture to guess that it is one of the few state parks which is used so extensevely, year round.

The delicate balance which exists between nature and the environment even when tampered with in only a minute manner can only bring disastrous results. Must we in our temporary stay upon this earth continue to create vast lands which are ravaged in the name of progress? Doesn't anyone realize that there mustbe a stop to this, if not in our generation then in those of our children or grandchildren? Are we to do anything we please in order that we might "live better"? It is my belief that most people in this area do not want the steeel plant and this question should be put before the voters.

I am unequivocably opposed to the plant unless total and complete safeguards can be made and enforced concerning it's safety. I don't believe U.S. Steel has any intention of building a clean plant unless they are forced to do so because of the cost involved.

Thank you for your consideration.

Very Truly Yours,

Richard J. Markiewicz

RICHARD J. MARKIEWICZ
418 Peninsula Drive
Erie, PA 16505

Richard J. Kleppick
325 Winders Street
Pittsburgh, Penna. 15207

Aug. 30 1978

Colonel Darial Ludwig
District Engineer
U.S. Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York

Dear Colonel;

Please refuse the permit application # 77 492 3, proposing the construction of a United States Steel Mill near Conneaute Ohio.

Quoting from the E. I. S., page 4 statement 12 ;

"Contaminants remaining in the effluent stream after treatment would be discharged into Lake Erie in concentrations higher than normally present in this body of water. The Lake waterswould also be used to disperse and disipate part of the excess heat generated during plant operation."

As a resident of Pittsburgh, I have seen what rolling mills can do to a River. The Monongahela river has not been able to cool itself, and the only aquatic life capable of surviving in this heated body of water is Cat fish and/or Carp. Lake Erie is ballanced on a see saw between becoming "A New Dead Sea", or a Modern example of mans compatability with nature. With all the other polluters of this beautiful lake, can Lake Erie withstand the increase in temperture? RK-1

Another concern of mine is the method U.S.Steel will use to evaluate its effecton the enviornment. Again I Quote from section 13 statement# 8,

"Sulfur dioxide and the various oxides produced by the lakefront facility could react synergistically to cause damage to sensitive agriculture RK-2

chops, nursery stock, and natural vegetation at lower concentrations than would otherwise occure on an individual basis. Available data are not sufficient to predict the actual impact plant emissions would have on area vegitation or wildlife. The applicant has agreed to initiate a monitoring program to identify and define the effects on vegitation."

Data is not available, if the effects are negative what will we do then? Can we afford to gamble with nature, havent we destroyed enough of our enviornment through exploitation? The purpose of the E. I. S. is to know what is going to happen, doesn't U.S.Steel contridict its intent ?

U.S.Steel has many operating facilities sitting idle, they also operate with a very low ratio of production verses man hours. Rather than construct another inefficient facility, should"nt, or would'nt it be more logical to clean up and maximize the efficiency of its existing facilities ? RK-3

I dont want Turkey creek to change, I dont want the effects of this to ruin both Lake Erie and Conneaute creek.

"Permanent elimination of 17,000 feet of Turkey creek , Aquatic habitats utilized by resident warm water fish species migratory cold water species entering from Lake Erie would be permanently lost. The state of Ohio Salmonid stocking program for this watershed would be terminated as a result of this action since the proposed diversion channel would be unsuitable for utilization of such fish species."

Please do not permit U.S.Steel to build!

To this date I have notified:

United States Senate
1. H.J. Heinz
2. R.S. Schweiker

United States Congress
1. J.M. Gaydos
2. W.M. Ronaschowal
3. M.L. Marks

Congress of Pennsylvania
1. Dom Olkin
2. K. Leroy Irvis
3. David DeLucia
4. Tony Walgreen

Candidate for governor of Penna.
1. Peter Flaherty
2. Dick Thornburgh

The Sierra Club of the United States

Colonel Daniel Zadarecky
District Engineer
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

RE: Comments requested on proposed U.S. Steel facility in Conneaut, Ohio and Northeastern Pa.

The request of U.S. Steel for permission to conduct an iron and steel making complex near Conneaut is far more than just a permit to alter some area along the shoreline of Lake Erie. It is a request to alter the water, the air, the earth, and it is a request to alter the very style of the entire environment.

For our first years Conneaut has remained essentially a small town, but this agriculture-garrison ended and tuggie manufacture, it is the last most of Conneaut people quit that we have not grown into some huge metropolis where they have to traffic, telecrafts on their radios going to work and air pollution alerts coming home.

It is not change and growth that we are wary of, and many the sudden growth that we have brought on by a spot of this magnitude literally over night.

Of all the statements the EIS makes regarding the impact of the building of this mammoth it is

Thank you
Richard J. Kleppich
Richard J. Kleppich

the adverse effects that must face the closest scrutiny. For should this plant be built the changes to this area in which we live will be permanent and irreversible.

A. Changes to the Environment

1. Natural environment.

At risk should this plant be built is the deterioration of quality in the air we breathe, the water we drink and the countryside we live in. There is no study that shows any of these elements improving by allowing the fish facility to be built, only statements that it must cause the qualities should not drop below certain "accepted" standards.

a) Air quality.

RW-1 Emission from the proposed plant will cause a definite deterioration in air quality. Among other things sulfur dioxide produced by the plant may very likely come down from the sky at certain times in the form of a sulphuric acid rain, causing damage to agricultural crops and nursery stock.

RW-2 The emission of sulphur dioxide, carbon monoxide, hydrocarbons, and other materials can cause adverse health problems over the long run. Many of these emissions will fall within certain accepted standards is likely saying a "little poison won't hurt you". It is a proven fact that incidents of cancer and respiratory ailments are much higher in industrial areas than in rural areas. I see no reason why we should have one added.

b) water quality.

RW-3 After a long siege of fighting to clean up Lake Erie, it now appears that she is making a come-back. The water quality has definitely improved, it is clearer and cleaner now than it has been in a long time. The commercial fishing industry is beginning to come back and is enjoying moderate success. Recreational boating has been increasing each year. Spot fishing has seen drastic improvements in the last few years. But, most importantly, it has remained our most convenient source of drinking water. Should the proposed plant be built all of these may become threatened. Effluents and water run off from the proposed plant although treated will be released directly into the lake, most likely causing adverse effects on water quality and marine life. During the construction phase, dredging activities and blasting will cause killing of fish and destroy spawning grounds, thus

doing irreparable damage to commercial and sport fishing.

The completion of the proposed plant would signal the beginning of heavy shipping, and would increase the incidents of spillage, along with the greater possibility of major accidents. The heavy shipping would also take precedence over the recreational boating. It is important that Conneaut water supply not be placed in jeopardy or in a position of secondary importance by the U.S. Steel facility.

RM-4
RM-5
RM-6

c. Land quality

The construction of the proposed facility would result in the permanent loss of [illegible] to the lake shore to the Conrail tracks. Turkey Creek is a public recreational spot for sportsmen and is at present a site of State of Ohio salmon stocking program. Also a result of construction would be a loss or moving of various wildlife species from the area. At least one, the spotted turtle being considered an endangered species under Ohio law.

It is my opinion that Turkey Creek should be left in its natural state for no matter what method is used to divert its flow, it would never replace its effectiveness as in its natural state.

II Social Environment

(a) Population

Along with the proposed plant will come the people to build it and the people to man it. The present Conneaut population is just over 13,000 people. According to the U.S. Bureau of the Census, construction phase 16,000 people would be employed by 1980. Using the modest figure of 3 people per family, this would result in the influx of 42,000 people into our area within 4 years. This possibility exists that the City of Conneaut could quadruple in size within one 4 year period. Growth remained somewhat constant for almost 180 years. The effect of this on our present citizens could be traumatic.

RM-7

(b) Welfare

It is often implied that should the plant be built, it would ease the unemployment problem in this area. What is overlooked is the greater likelihood that most of the people employed in the construction

and operation of the plant will come growth in the area. Coming into this area will be many people in search of jobs who do not get them and many people who get jobs but did not keep them. Totally of these people will move on, unemployed they may remain in this area as the unemployed, thus in fact increasing the number of unemployed in our area. These people will show up on the welfare list thus becoming our responsibility to house, clothe and feed.

RM-8 c. Crime

It only follows that with an increase in population and welfare, increase in crime follows. The need for more police protection would exist.

II. Economic effects.

Should the proposed plant be built, it most certainly would bring more dollars into this city in the form of payroll dollars being spent here and tax dollars from its "new citizens". However, these benefits the majority of our present citizens is not quite clear, since they won't be receiving these monies. What is clear is how these extra dollars and people provided by this plant can actually cost our citizens money.

a. Housing cost.

b. Speculation has shown us this effect has already escalated housing cost in Concord for both new and older homes. Should the mill be built, the influx of people would create an even greater increase.

6 Tapes

RM-10 The increase in population would directly result in increase in operating expenses in our school district along with a need to expand our high school. This cost could only be offset by an increase in property taxes. Population effected increases in other services such as police protection, fire protection, more and better streets and traffic control would also be drawn from increased property tax and city income tax. The (Customer) states that new and larger sewage facilities would be paid by government funding. There is a very vague explanation of how this sewage facility would be paid for by the government. To it only means it is we the citizens who pay for it.

c. Increase in cost of living.

The development of the lakefront plant will cause the cost of living to rise faster than normal. Housing and rental property would be the chief cause of the increase, but the overall higher wages of the plant workers would drive other costs such as clothing and medical expenses higher. Particularly affected

would be those on fish and invertebrates.

C Conservation of Energy.

RW-11 Should this lakefront facility be completed, there would be substantial increase in the need for natural gas and electricity. By 1990 total electric consumption according to the EIS will reach 61 million K.W.H., gas consumption 52.6 million cubic feet, and distillate oil will reach 26,000 barrels (all these a time of declining energy supply. Given the waste age, we find it hard that our natural gas supply would not last through the winter. How will we get all the extra supply of natural gas for all the additional people

RW-12 Gasoline shortages seem to crop up at least once every winter. How will all the extra gasoline coming from that mall generate the automobiles and other transportation for the plant workers not even to mention the cancer causing hydrocarbons they will emit.

In presenting some of my views I should reiterate that my first concern is the protection of the rights of Conneaut's present citizens. By all appearances the cost to these people in terms of a healthy environment and the life style they are used to is too high. At this time this is not enough evidence or material furnished to show otherwise.

Rachael Williams
634 Lake Rd
Conneaut, Ohio 44030

NEW YORK STATE AGRICULTURAL EXPERIMENT STATION
A Division of the New York State College of Agriculture and Life Sciences
A Statutory College of the State University, Cornell University
Department of Pomology and Viticulture
Hedrick Hall, Geneva, N.Y. 14456
Telephone: 315 — 2251

August 24, 1978

District Engineer
Attn: Regulatory Functions Branch
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

Thank you for the opportunity to review the Draft EIS Permit Application by U.S. Steel Corp. Proposed Lake Front Steel Mill, Conneaut, Ohio. For the past several years we in New York State have been concerned about possible detrimental effects of air pollutants on the grape industry, and have conducted a research program to objectively deal with this issue. For this reason, I am very interested in the U.S. Steel Lakefront Steel Mill Project. The following comments concerning the Draft EIS have resulted from my review.

SAE-1 (1). I support your assessment in Section 5.102, p.5-38 and Sec. 4.653, p.4-757, that sulfur dioxide and ozone additions from the Lakefront Steel Mill may increase injury to agricultural crops. Even if the Lakefront Steel Mill would contribute only small amounts to the background ozone level, the long-term effect of small additions of ozone will likely result in increased frequency of crop damage.

SAE-2 Although your estimate of Lakefront Steel Mill ozone increments of somewhat less than 6% are "very rough" projections and are likely too small to detect in relation to ambient ozone fluctuations (Sec. 4.439, p.4-528), any additional ozone would likely have adverse effects on sensitive vegetation. Levels of ozone already present in ambient air have been shown to damage agricultural crops such as grapevines (see references 1&2).

SAE-3 (B). The worst case of sulfur dioxide increment from the Lakefront facility will nearly double the baseline 24 hour maximum for sulfur dioxide (Sec. 4.659, p.4-762). Secondary development (p. viii of Summary) will result in additional sulfur dioxide emissions. Your statement that this is not expected to affect crop yields (p.4-763) does not agree with your suggestion in Section 5.102, p.5-38 or Sec. 5.73, p.5-27, that critical levels of sulfur dioxide are dependent upon ambient levels of other pollutants. Although these levels of sulfur dioxide alone may affect only sensitive crops, in actuality the 24 hour sulfur dioxide impact on vegetation will not occur in the absence of other ambient air pollutants.

(C). Your assessment in Section 5.73 and 5.102 that interaction of sulfur dioxide and oxides of nitrogen with ozone could increase crop damage is correct. Our research at the Vineyard Laboratory, Fredonia, N. Y., has

SAE-4 shown that small increments of sulfur dioxide added to ambient air will increase the amount of ozone-induced oxidant stipple injury to Concord grapevines, and will reduce soluble solids of the grapes (unpublished). The data suggest that sulfur dioxide in the air may lower the threshold for ozone injury to the vines.

(D). I support your assessment of the need for additional air monitoring east of the plant site (Sec. 5.104, p. 5-39); and recommend that two additional monitoring stations be established. These stations should be located in separate rural areas near sensitive crops such as grapevines. Continuous ambient levels of peroxyacetyl nitrate (PAN) and hydrogen fluoride should be monitored, in addition to continuous monitoring of ozone, sulfur dioxide, and the oxides of nitrogen.

Measurements of PAN have been almost non-existent in the northeastern U. S. even though precursors are adequate and conditions are ideal for PAN

SAE-5 formation. Symptoms of PAN injury have been observed on crops in S. Ontario, not too distant from the Lakefront Steel Mill site (5), and I have observed similar symptoms on grapevines in Western New York. Although PAN has been difficult to measure in the northeastern U. S., the U.S.E.P.A. has been working to resolve the monitoring problems.

Grapevines have been shown to be highly sensitive to fluorides (4,5). Fluorides accumulate in plant tissue and are therefore potentially more damaging over the long term to perennials than to annual vegetation. Amounts considered insignificant for any short period of time may prove to be significant if accumulated over many years.

(E). U.S. Steel Corp. has agreed only to monitor effects of the Lakefront Facility on vegetation (p. xii, item 6 of Summary). Specifics of this program should be incorporated into the Draft EIS. The research program suggested by Dr. Davis (Sec. 5.104, p. 5-39) is necessary, and will provide some answers to the question of effect of the Lakefront Steel Mill on vegetation. In addition to those suggested by Dr. Davis, studies should be promptly initiated on sensitive agricultural crops to determine how specific pollutant emitted by the Steel Millwill affect these crops. Vegetation response

SAE-6 should be examined in relation to pollutant concentration, duration, timing of exposure (such as during bloom, etc.) and interactions with other pollutants. Actual impact of simulated (estimated) Lake front Steel Mill emissions, along with other treatment levels of pollutants, should be examined on crops grown in the area known to be sensitive to air pollutants. Additional studies should examine the relationship of crop management and cultural practices to crop damage. These field studies should be complemented with appropriate laboratory investigations of the effects of pollutants emitted from the Lakefront Facility on vegetation.

Research to determine the effects of the Lakefront Steel Mill on agri-

SAE-7 cultural crops requires a minimum of 3 years pre-operational and 3 years post-operational as suggested by Dr. Davis in contrast to your suggestion of a minimum of one year each for pre- and post- operational studies in Section 5.104. Vegetation response to pollutants is highly variable from

year-to-year (1), and one-year studies are simply not adequate to determine response of field growing plants to air pollutants. In addition, response of perennials such as grapevines to pollutants are often most evident in the year following the year of exposure to the pollutant (2,6).

(F). Lakefront Steel Mill emissions of hydrogen fluoride, and heavy

SAE-8 metals and other trace elements are not adequately discussed in the Draft EIS. Even at trace amounts in the raw material used by the Lakefront Facility, the large amounts of coal, oil, iron ore, and limestone consumed over the lifetime of the Lakefront Facility will result in considerable quantities of these elements potentially emitted by the steelmaking process.

Those of particular concern to agriculture are fluorides (as discussed above) and the potential of heavy metal residues in agricultural crops or in

SAE-9 agricultural soils. An estimate should be made of the quantities of these elements in the iron ore, limestone, coal, oil, and other fuels used by the Lakefront Facility; and an estimate should be made of amounts of these elements emitted into the atmosphere in the fuel combustion and steel making process. Estimates should also be made of atmospheric concentration and deposition at agricultural sites of various distances from the Lakefront Facility site. Suggested elements to examine include F, Cl, Br, As, Hg, Pb, Se, Cd, Cu, and Zn. The impact of these pollutants from steel mill related secondary development (Item 18, p. viii of Summary) should also be examined.

(G). I was not able to adequately review the data presented in Table

SAE-10 4-323, p. 4-751,2 and Table 4-324, p. 4-758,9 since some of the references listed (as corrected by your staff from those listed on pgs. 4-874-7) are incomplete. I have been unable to locate references 4-130 (Yopp, J. H. et. al) and 4-138 (Hindawi, I. J.) from the information supplied in the corrected reference list.

(H). Your assessment of potential increases in acidic precipitation is of particular concern to me. We are just beginning a joint research

SAE-11 project with Boyce Thompson Institute to determine the impact of acid precipitation on fruit crops. Your suggestion that a sulfate-induced pH drop of 0.3 is too small to affect sensitive crops (Sec. 4.659, p. 6-763) remains untested. A small pH drop at the lower pH levels could be enough to reach the threshold for acid injury to vegetation. In addition to sulfates, nitrates emitted from the Steel Mill and related secondary developments will also contribute to potential increases in acidity of rainfall.

My concern is not limited to the local effects on vegetation in the Lakefront Steel Mill area, but also the long-range transport of pollutants to more distant vineyard areas in the Great Lakes Basin east of the mill. Grapevines in these areas are already being damaged by ambient air pollutants. If you have questions concerning my review, please contact me. A list of references cited is attached.

Sincerely,

Robert C. Musselman

RCM/ds
Enclosure

Robert C. Musselman
Research Associate

References

1. Musselman, R.C., W.J. Kender, and D.E. Crowe. 1978. Determining air pollutant effects on growth and productivity of 'Concord' grapevines using open-top chambers J. ASHS 103:645-648.

2. Thompson, C.R., E. Hensel, and G. Kats. 1969. Effects of photochemical air pollutants on Zinfandel grapes. Hort. Sci. 8:222-224.

3. Pearson, R.G., D.B. Drummond, W.D. McIlveen, and S.N. Linzon. 1974. [illegible]-type injury to tomato crops in southwestern Ontario. Plant Dis. Reptr. 58:1105-1108.

4. Bolay, A. et. E. Bovay. 1965. Observations sur la sensibilité aux gaz fluorés de quelques espèces végétales du Valais. Phytopath Z. 53:289-298.

5. Brewer, R.F., R.C. McColloch, and F.H. Sutherland. 1957. Fluoride accumulation in foliage and fruit of wine grapes in the vicinity of heavy industry. Proc. ASHS 70:183-188.

6. Fujiwara, T. 1970. Sensitivity of grapevines to injury by atmospheric sulfur dioxide. J. Jap. Soc. Hort. Sci. 39:219-223.

SOUTH SHENANGO TOWNSHIP PLANNING COMMISSION
(CRAWFORD COUNTY)
JAMESTOWN, PENNSYLVANIA 16134

August 29, 1978

Col. Ian D. Ludwig, District Engineer
Dept. of Army
Buffalo District, Corps of Engineers
1776 Niagra St.
Buffalo, N.Y. 14207

Sir:

The South Shenango Township Planning Commission has reviewed the draft E.I.S. for the steel plant.

We feel that statement does not take into consideration the impact on South Shenango Township.

Our township has the following assets which will be taken advantage of by the work force generated by the steel mill:

SST-1 1) The township lies on a direct route between the proposed mill and Pittsburgh. We are within 37 miles of the site.

2) We have a complete sewer system which will be in operation in January 1979. This is 1 of 2 sewer systems in the entire area. People have to move into areas which are sewered since the area is unsuitable for on lot sewage.

SST-2 The E.I.S. has said nothing about South Shenango Township. Where are the funds going to come from to take care of services required when housing development begins?

SST-3 We notice that the E.I.S. has not addressed the impact on agriculture in that area. The omissions from the E.I.S. would be very detrimental to the agriculture community. Where money comes to that area from agriculture that will come from what is now proposed from the steel mill. The E.I.S. ignores this fact completely.

SST-4 The E.I.S. has not touched on the fact that associated industries, such as the Toho Generating Plant at Girard, Ohio, will be coming into the area simply because the steel plant is coming in.

Residents of South Shenango Township are concerned with the impact of any and all new construction and industry.

Sincerely,

David Livingston
Chairman, South Shenango Planning Commission

COMMENTS ON THE DRAFT EIS
CONCERNING THE PROPOSED U.S. STEEL FACILITY

Submitted On Behalf Of

SPRINGFIELD TOWNSHIP, PA

and

EAST SPRINGFIELD BOROUGH, PA

by

Northwest Engineering, Inc.

as approved by the

Joint Membership of the Governing Bodies

August 22, 1978
U.S. Army Corps of Engineers
Public Hearing

Springfield Township and East Springfield Borough recognize that with the resources currently available to them to investigate the representations of the Draft Environmental Impact Statement (DEIS) that they could not evaluate in depth most of the issues currently being examined. Therefore, efforts have been concentrated upon evaluating the issues believed to be most critical with regards to the needs of the municipalities in order to absorb the impacts from this proposed facility should it occur.

It is not the intent of our comments to establish either a positive or negative position towards the proposed mill, but merely to transfer our thoughts as to our requirements if this project is realized.

Of major concern to Springfield Township and East Springfield Borough is the lack of any significant infrastructure to support an impact of the magnitude that would be created by the steel mill.

The governing bodies recognize that the planning for community facilities, and the residual physical effects resulting from any proposed developments, will ultimately be the statutory responsibility of the local municipalities.

Some of the specific community facilities which require attention and concern are as follows:

1. Storm Water Management

One of the more sensitive issues addressed in the EIS is the relocation of Turkey Creek. The proposal is to divert the waters of Turkey Creek into a diversion channel approximately 16,000 feet in length along the north side of the Penn Central Railroad to an outfall into Conneaut Creek (See Attachment "A"). SSP-1

This proposed channel, based on the size and configuration shown on Page 4.2.3.1-17 of the draft EIS and a slope of .0044 feet/foot which is interpolated from the USGS Quadrangle map, yields a capacity of approximately 225 cfs.

Preliminary runoff estimates indicate that approximately 1,650 cfs. of storm water could be expected from a fifty year storm based upon existing development, and approximately 2,800 cfs. based upon ultimate development. These figures are based upon the tributary watershed area upstream from the proposed beginning of the relocation (Point "A" on Attachment Maps).

It should be noted that based upon these calculations the proposed channel will only transport approximately 10% of a 50 year peak flow. We are attaching copies of our calculations for review. The method utilized was the method of the U.S. Department of Agriculture, Soil Conservation Service. A second problem exists in that several small intermittent streams exist which cannot flow by gravity into the proposed relocation, however, these streams must have outfalls.

We suggest that more direct routes to the lake for this proposed rechanneling should be evaluated. We offer the following possibilities (See Attachment "B").

A. Continue Turkey Creek north along where Rudd Road currently exists to a Lake Erie outfall.

B. Parallel the railroad tracks eastwardly to an outfall in Raccoon Creek.

Both of these routes have two distinct advantages:

A. Shorter channel distance

B. Increased channel slope

The fact that U.S. Steel owns much of the property between Springfield Township, East Springfield Borough and Lake Erie, land locks these municipalities from all natural drainage outlets, not only the Turkey Creek Basin. We request that as a condition of the Army Corps of Engineers permit, if issued, a requirement be placed upon U.S. Steel to provide right-of-ways and easements as necessary for such outfalls, as will be required based on the current storm water management plan in preparation. This requirement should further be agreed to by the Bessemer Railroad and the Pittsburg & Conneaut Dock Co. for any facilities of these entities which may serve the project facilities.

2. Municipal Sanitary Sewage Facilities

Local municipal government is responsible for the review of building, subdivision and development plans concerning the U.S. Steel development, the initial temporary housing developments for construction workers, the support commercial and industrial developments that will almost immediately happen, along with the eventual permanent residential subdivisions. Large sums of money will hinge on the existence of sound facility plans prior to the necessity for establishing the guidelines which will direct the initial development patterns. This one facility when used in conjunction with the zoning ordinances will play a key roll in affording the municipalities the opportunity to effectively manage their community's development.

3. Municipal Potable Water Facility

The municipalities will have a very strong need for a potable water system as development plans are formulated. One question which will need to be investigated is the source of supply for the system.

STP-2 Lake Erie is a very distinct possibility, however, the municipalities have not initiated any studies to examine this situation. One possibility which merits consideration is possibly having the proposed water intake of U.S. Steel sized adequately to fulfill the needs of the local municipalities. We realize that some costs would be involved with doing this but if shown to be the most economic alternative, we would like to have this option available.

An additional concern is that the National Polution Discherge Elimination System (NPDES) permit required for the U.S. Steel facility is the responsibility of the Ohio Department of Natural Resources. Because this discharge will be in the prevailing flow direction relatively close to any water intake for Springfield Township we are requesting that this permit be either a joint effort of the Ohio Department of Natural Resources and the Pennsylvania Department of Environmental Resources or the responsibility of a federal agency more

STP-3

responsive to Pennsylvania based objections than an agency solely responsible to the State of [illegible].

4. Transportation

The existing network of roads throughout Springfield Township and East Springfield Borough is presently adequate for the present traffic conditions. However, with the implementation of development much thought will need to be STP-4 given to developing a transportation plan which will allow a smooth traffic flow through the communities. We shall also expect that a comprehensive plan for construction traffic will be submitted to the appropriate officials so that disruption of normal activities may be minimized during the construction period.

5. Other Considerations

One element which becomes somewhat critical in formulating the previously mentioned facility plans is the population projections. The population STP-5 projections contained in the draft EIS vary significantly from those of other responsible agencies. While we are not sure which projections are probably going to occur we are requesting that the Impact Model of the Arthur D. Little firm be given the projections of the Erie County Department of Planning as input. Our concern is to attempt to see how the impacts based upon populations will vary if this projection is realized.

Regardless of which demographic plan for development occurs it will lag significantly behind the required development of the facilities. Accordingly, revenues will lag and serious fiscal problems could exist in attempting to provide these facilities.

It is perfectly clear that local municipalities are being confronted with STP-6 a tremendous task to effectively manage the development of their communities and provide the necessary services. While this is not an impossible situation it is one that requires time to properly address and prepare for. In an effort to accomplish this, Springfield Township and East Springfield Borough have placed on a referendum the question of merging. However the local governments or government of the municipalities or municipality will insist that certain needs, issues, and requirements be dealt with and feasible plans, both physical and fiscal, be developed in such a way that long term problems are not left for the municipality to deal with after all the permits are issued, the development initiated, and the high level state, federal, and regional agencies have gone to other project.

We do not intend to impose initial facilities costs on present residents beyond those normal in adjacent non-impacted communities to pay for the additional facility capacity needed to accept whatever development occurs.

We will expect full support and assistance from all involved organizations, public and private, in accomplishing these objectives and will not hesitate to use our municipal prerogatives where necessary to prevent unacceptable short or long term results.

Richard [illegible]
chairman
[illegible]

Robert J. [illegible]
Boro Council Pres.

1103 Kirkpatrick Avenue
North Braddock, PA 15104
August 25, 1978

District Engineer
U.S. Army Engineer District
Buffalo, New York 14207

ATTN: Regulatory Functions Branch

Dear Sir:

I wish to submit the following comments as testimony in the public hearings on the proposed U.S. Steel Lakefront Plant in Northwestern Pennsylvania on behalf of my constituents in the 35th Legislative District, which is located along the Monongahela River Valley in Allegheny County. Many of them work in U.S. Steel plants and could be adversely affected by a decision on this plant.

I say "could be" because I see no mention of "Statewide Employment Impacts" in the draft summary copy of your Environmental Impact Statement. If the "greenfield" plant in Conneaut should serve to reduce the operations of plants in other parts of Pennsylvania, particularly in Pittsburgh, and if that reduction should cause unemployment locally, then I would oppose the Commonwealth's support of the plant.

I am, therefore, requesting that the environmental proposal be broadened to include statewide economic impacts.

TM-1 I must remind you that this suggestion has already been made in Part Three of a critique of the Corps of Engineers Study by the Governor's Office of State Planning and Development, calling your draft proposal "deficient in providing information concerning the economic impacts from a wider perspective," and, further, by stating that "it is reasonable to assume that the start-up of Lakefront operations could coincide with correlating reductions elsewhere in the applicant's corporate structure".

I am also disturbed by the environmental concerns raised in that study and would encourage the Corps of Engineers to address those issues in the final version of the Economic Impact Statement.

The Commonwealth of Pennsylvania and the local governments involved will be making substantial investments in the public support systems to accommodate the projected growth in the area. In my opinion, this allocation of public funds in one region should not be made if it causes unemployment in another region of the State. If this were to occur, steelworkers all over the State would be paying the salaries of State employees who conduct studies that, ultimately, would put them out of work.

In closing, I would like to remind you that the public's right to know the full implications of the development of the Lakefront facility is absolutely essential if the project is to be successful. Let us clarify these matters now before the Commonwealth commits itself to the untenable position of playing one region against another.

If I can in any way assist you in facilitating that prospect, feel free to call at your earliest convenience.

Sincerely,

Tom Michlovic
Democratic Candidate
35th Legislative District

(412) 351-0515 (Home)
(412) 469-2500 (Work)

TAM/mmg

Western Reserve Chapter
TROUT UNLIMITED

Sept. 1, 197°
9278 Liberty Rd.
Twinsburg, Ohio 44087
216- 425- 4159

Col. Daniel Ludwig,
Dist. Engineer
Buffalo Corps of Engineers
1776 Niagara St.
Buffalo, N.Y. 14207

Dear Col. Ludwig,

The Western Reserve Chapter of Trout Unlimited recommends that you do not grant permits (denial) to U.S. Steel for constructing a Lakefront Plant at Conneaut, Ohio.

General Comments

You should consider all of the secondary environmental implications of this proposal including regulation of air quality, land use changes, and water quality. However, on page 6-2 of volume 4 disclaimers are stated that might allow you to avoid that responsibility.

TU-1 The inclusion of these disclaimers in the DEIS indicate a weakness in the permit system, itself, and in all volumes of the DEIS. It is a weak document that does not fully consider all possible damages to citizens, Lake Erie, and the shoreline.

The descriptions of Lake Erie acquatic life and of the impact upon the lake are particularly inadequate.

Specific Comment

TU-2 1. Construction in Conneaut Harbor will have an important impact on fish spawning and nursery areas. The applicant has not adequately discussed this matter in the relevant section. Furthermore, the applicant has not adequately justified a pier extension of 1,500 feet, and has in Chapter 6 failed to indicate alternative locations or configurations for piers.

2. In addition to disruption from dredging pier design will cause the following water quality problems:

TU-3 a.) Reduced and altered circulation of water.
b.) Increased silting.
c.) Entry of other pollutants.

TU-4 3. Paragraph 1.343 on page 1- 263 mentions criteria for establishment of a solid waste disposal site. The applicant feels that his logic leads to the conclusion that Area 7 is the best site for lined impoundments. The applicant is confused. His own data lead to the conclusion that Area 4 is the worst site. It's closer to Lake Erie than the other sites, and contains Turkey Creek.

TU-5 4. Page 1-267 paragraph 1.346 fails to assess the chemical, physical, and biological aspects of lake sediments that will be disturbed during dredging for the intake- sturcture pipeline trench.

5. Paragraph 2.7717 page 2- 942. It's not true that other areas will "suffieient" ly sustain the displaced migratory birds.

TU-6 The importance of the site to migratory birds is further glossed in paragraph 2.773, page 2-981. Futhermore, the applicant seems to ignore the advise of his own consultant who recognizes the importance of the site to migratory birds on page VII-13.

TU-7 7. The samples of adult fish in Turkey Creek were, according to paragraph 2.905, taken April thru October. This is not adequate becasue migratory salmonids use the area September and October.

8. The applicant feels that the presence of rainbow trout in Turkey Creek is unusual. Cf. Paragraph 2.913, page 1215. It is not unusual to fishermen and the U.S. Fish and Wildlife Service in ohio. TU-8

9. Loss of 1/3 of the shallow areas of the western portion of Conneaut Harbor is contemplated. Cf. paragraph 4.113, page 4-225. Because that area supports spawning, nursery, and feeding of fish populations the loss is unacceptable.

10. The applicant, apparently, admits to violation of [illegible] in the [illegible]. Cf. paragraph 2.811, page 2-420; paragraph 2.[illegible], page 117; paragraph 2.917, page 121[illegible] and paragraph 4.[illegible], page 4-[illegible]. However, the document fails to say that several hundred feet of Turkey Creek were put into a culvert and covered with fill. Nevertheless, reference is made to "- - present claims, and to [illegible] condition." The U.S. Fish and Wildlife Service has said that "This current channelization was done without prior authorization from the [illegible] and no enforcement action has been taken against the U. S. Steel subsidiary despite the apparent violation of federal law." TU-9

11. Impact on recreation, paragraph 5.13, page 5-5 fails to say that citizens will lose access to Lake Erie thereby. This will be a major blow to recreation in Ohio, and a major loss to all Ohio citizens. TU-10

12. Paragraphs 5.32 and 5.33, page 5-34 say there there will be a loss of a one year class of woodcock due to loss of a major nesting area. That estimate is inadequate. There will be more loss, and the biological statement is not adequate. TU-11

13. The discussion of alternative plant layout in paragraphs 6.7 and 6.8 does not adequately include an arrangement of facilities which could result in a "greenfelt" for Turkey Creek. That "greenbelt" was suggested by the Corps in a letter to the applicant dated April 21, 1977. TU-12

14. The applicant says that costs outweigh the "questionable benefits" of relocating Turkey Creek east of Rudd Road. But the applicant doesn't say what costs or how or whether they were estimated. The applicant admits in paragraph 6.91 that no detailed design specs were created. Hence the applicant has nothing to base cost estimates upon. TU-13

15. In paragraph 6.109 the culverting and filling of Turkey Creek is said to be required for construction of bridge or conveyor belt systems. It would seem that conveyor belt construction design would permit briding of Turkey Creek. More data should be included on such designs. TU-14

16. Paragraph 1.349 page 1-274 describes the fill and diversion of Turkey Creek. Despite the fill and diversion there will still be a natural channel or drainage flow in that area. Into this area of natural flow the applicant proposes to dump solid wastes. Leaching from the waste into Lake Erie is inevetible. These wastes are to be generated during operation. The applicant, if allowed to fill and drain, should not dump anything into the area, and there are not controls restricting the contaminating nature of the fill. TU-15

17. Relocating of Turkey Creek is discussed in two places in the document. 1.349 and 6.106. But the applicant does not discuss the following adverse effects arising from most stream relocations: TU-16

a) Loss of stream length.

b) Increase in velocity.

c) Long culverst do not work as stream relocators because fish

swimming within them can't develop sustained speed. This would inhibit in-migration of migratory salmonids.

TU-17 16. A further adverse effect of relocation: The possible loss to the State of Ohio of the stream and of a surf fishery at the mouth of the stream if relocation design places the stream wholly within Pennsylvania. The document does not adequately discuss this problem.

TU-18 17. Retiring the plant within the habitat of the spotty turtle which is endangered in Ohio would be a disservice to the ecology.

We feel that we've included adequate information relevant to the permit process upon which to base a denial of permits.

Thanks.

Sincerely,

Fred Olson

Fred Olson

TENNESSEE VALLEY AUTHORITY
KNOXVILLE TENNESSEE 37902
290 Liberty Building

August 21, 1978

Mr. David L. Fishman
Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts 02140

Dear David:

I have had occasion to study Working Paper II from the draft EIS on the U.S. Steel Lakefront plant. I found a number of references to TVA information which seemed to me to be inappropriate or misleading. I suggest the paper be modified to reflect the following comments.

TVA-1 On page II-60, you quote from my paper on page 4 (not page 6 as in the footnote) about the general range of mover rates, apparently to support the mover rates found in your study. The quote is taken out of context. The preceeding sentence in the paper states, "It appears that the projects surveyed provide a reasonable range of location characteristics to set limits of the percentage of movers estimated for a new project of similar scale." The last phrase "of similar scale" is the key for the whole paper, which is oriented toward power plant projects with peak employments in the 2,000 to 3,000 range--not the 10,000-person range. As noted in the footnote, the EIS for the Hartsville Nuclear Plant project, with a projected peak employment of 5,000, projected the number of immoving employees to be 2,700 or 54 percent. I suggest either deletion of the citation or adding to the footnote the context in which the quoted statement was made, i.e., for projects in the 2,000 to 3,000 peak employment range.

TVA-2 On page II-75, there is another quote from my paper; but it is from page 7 rather than page 11. Since you added two parenthetical notes which were not in the paper, I suggest you paraphrase the statement or delete the parentheticals from the quotation. As you know, the family status split from TVA's surveys is between those employees with families and those employees without families. Those employees without families include what your study calls weeklies but also includes employees who are single for another reason--never married, divorced, widowed, or separated. Of course, these employees very likely stay in the area once they move there rather than leaving the area every weekend.

TVA-3 On page II-76 in the footnote, you note that "the TVA experience shows a very heavy bias toward broader car pooling (3 to 4 workers per car)" and go on to mention the Hartsville employee transportation program. This is in apparent support for your choice of 2.5 workers per car for the transportation impact analysis. It is only at Hartsville that the average rider per vehicle is about 4. This includes the vans and buses in the employee transportation program. To achieve this average ridership level has required a subsidy of about 30 percent of the total cost of the operation of the vans and buses. At other projects where no program is in effect, the average worker per car is in the range of 1.7. This situation needs to be clarified or the reference to TVA dropped.

An Equal Opportunity Employer

Mr. David L. Fishman
August 21, 1978

TVA-4 On page II-70 in the footnote, you mention the use of the union local address as the location for its entire membership and mention that TVA uses a similar methodology. Since the source for that statement is not cited, I was not able to verify it. While the methodology may be used for regionwide studies, I'm sure it is not used for county estimates because many locals have jurisdiction covering extremely large areas. For example, a Nashville local would have jurisdiction for our Hartsville project 50 miles east and for a construction project at our Cumberland Steam Plant 50 miles northwest. To assume the local's total membership is all located in Nashville for both projects clearly would be inappropriate. I am not aware of any TVA analysis aimed at estimating the population influx due to a project which uses the methodology you outlined. This includes both TVA studies and those done for TVA projects by outside, independent consultants. There are several alternate and reasonable methodologies. I would suggest deleting the reference to TVA in the footnote.

TVA-5 On page II-87 in the second footnote, I suggest you let the reader decide whether Gallatin and Lebanon are "only" slightly larger than Hartsville. Both Lebanon and Gallatin are about 13,000 to 14,000 in population while Hartsville is about 2,200. Towns the size of Lebanon and Gallatin offer many attractive features not found in a town the size of Hartsville. In addition, they are both located about halfway between the Hartsville project and Nashville.

TVA-6 The paper is extremely complete in its presentation of assumptions and methodology. This enables the reader to easily check the results or recalculate new results using other assumptions. However, there is one omission in the paper which must be an oversight. That is the methodology for the mover-weekly split. Beginning on page II-62, the data are simply presented with no explanation as to how they were calculated. It would make the paper more complete were this methodology added.

Sincerely,

George R. DeVeny
Regional Planning Staff
Division of Navigation Development
and Regional Studies

cc: Dr. Roy Brant, Chairman
Northwest Pennsylvania Futures Committee, Inc.
Route 20 and Nye Road
West Springfield, Pennsylvania 16443

Mr. Charles Scott
Institute for Community Services
Edinboro State College
Edinboro, Pennsylvania 16444

U.S. Army Engineer District,
Buffalo
1776 Niagara Street
Buffalo, New York 14207

R.D. 1 Box 4-B
Jamestown, Pa. 16134
Sept. 2, 1978

Col. Dan D. Ludwig, District Engineer
Dept. of Army
Buffalo District, Corps of Engineers
1776 Niagra St.
Buffalo, N.Y. 14207

Sir:

I wish to present my comments regarding the Environmental Impact Statement for the proposed U.S.Steel plant at Conneaut, Ohio.

I want to go on record that I am not opposed to progress. We need to provide jobs for people, and we need to provide homes for people who hold these jobs.

We must build industry which is compatible with the area in which it is located and we must insure that industry does not degrade the area in which it locates.

In order to accomplish these ends it is important to investigate all of the impacts which will occur when any industry moves into an area.

The E.I.S. for the proposed U.S. Steel plant is sadly lacking in scope.

WJB-1 The E.I.S. completely ignores the impact of population and housing growth in Crawford County and specifically in South Shenango Township..

Any development in the 50 mile radius of the proposed steel plant must be in areas serviced by municipal sewer systems because the soils in the area are not suitable for on lot sewage effluent disposal. The North and South Shenango Joint Municipal Authority is one of two systems in the area that are capable of accepting growth. These are the areas that will suffer immediate impact and they are not even mentioned in the statement..

WJB-2 There will be a need for government funding to meet the planning needs for these communities. The communities are too small to provide for themselves. Slow, progressive growth can be provided for but not the rapid uncontrolled growth which will result from a huge steel mill. The E.I.S. should mention this as a definite need..

WJB-3 What of the secondary impact which will be caused by the phasing out of production in the Pittsburgh area? What is to happen to the work force in Pittsburgh at the present U.S.Steel production plants? Although U.S.Steel doesn't want to discuss this, it will be a serious impact which must be addressed. The proposed mill will replace present operations. Is Pittsburgh to become a ghost community so

that a new "Pittsburgh" with all its problems can be created in Conneaut, Ohio?

WJB-4 The D.I.S. mentions that the revenues generated by the mill will offset the costs of their response to the effects. However, is it not true that the agricultural community in the general area generates more revenue than the proposed mill is predicted to generate? It has not been shown that emmissions from the proposed mill will be controlled so that they will not be harmful to present cropping systems. Until it can be shown that emissions will be compatable with cropping systems, the mill should not be allowed to be built. How

WJB-5 can you allow an industry to move into an area of prime and unique agricultural land if the productive capability of that land will be destroyed? The problem is that industry can locate almost anywhere--you cannot find prime and unique agricultural land just anywhere;when it is destroyed, it is gone forever.

It is a shame that Federal projects of much less magnitude are required to develop absolutely complete environmental impact statements (up to the last dot in) i.e. the habitat of the snail darter. Yet private industry can develop a partial statement full of inaccuracies and omissions and not be held responsible.

It seems to me that the Corps of Engineers must be held responsible for problems which might evolve from inaccuracies or omissions in the final impact statement.

Very truly yours,

William J. Bramlage

William J. Bramlage

cc: M.D.Marks Member of Congress

The following letters of comment did not require responses

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 1 1978

District Engineer
ATTN: Regulatory Functions Branch
U. S. Army Engineer District Buffalo
1776 Niagara Street
Buffalo, New York 14207

Gentlemen:

This is in response to your request for comments on the Draft Environmental Impact Statement for the proposed U. S. Steel Corporation Lakefront Steel Plant, Conneaut, Ohio.

We have reviewed the statement and determined that the proposed action has no significant radiological health and safety impact nor will it adversely affect any activities subject to regulation by the Nuclear Regulatory Commission. Accordingly, we have no substantive comments to make.

Thank you for providing us with the opportunity to review this Draft Environmental Impact Statement.

Sincerely,

for Voss A. Moore, Assistant Director
for Environmental Projects
Division of Site Safety and
Environmental Analysis

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION
CURTIS BUILDING, SIXTH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

REGION III

August 4, 1978

In reply refer to:
3I
IRF-1

Col. Daniel D. Ludwig
District Engineer
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Col. Ludwig:

According to our latest official records the project covered by the Draft Environmental Impact Statement for the U. S. Steel Lakefront Mill in Conneaut, Ohio, is not in a floodprone area of our region. Therefore, the U. S. Department of Housing and Urban Development/Federal Insurance Administration (HUD-FIA) Region III has no comment on the project.

Sincerely,

Walter H. Pierson
Regional Director
Federal Insurance Administration



MID-ATLANTIC FEDERAL REGIONAL COUNCIL

Curtis Building, Room 722
6th and Walnut Streets
Philadelphia, Pennsylvania 19106
(215) 597-9114

OCT 11 1978

Thomas C. Maloney
Chairman

James F. Mallady
Vice Chairman

Colonel Daniel D. Ludwig
Buffalo District
Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This letter is in response to several questions raised at the recent public hearings regarding the Draft Environmental Impact Statement for U.S. Steel Corporation's proposed Lakefront Plant in West Springfield, Pennsylvania/Conneaut, Ohio.

The Mid-Atlantic Federal Regional Council has addressed the issue of whether or not the construction of the proposed facility by the applicant is consistent with the President's national urban policy goals.

After careful review of this question, we have concluded that the proposed steel mill is basically consistent with the Federal urban policy. Specifically, we have concluded that:

1. The West Springfield, Pennsylvania/Conneaut, Ohio location is within the traditional Pittsburgh-Great Lakes "steel belt". The applicant's proposal does not threaten to cause a migration of the steel industry from its traditional production region.

2. The economic development in Erie and Crawford County, Pennsylvania and Ashtabula County, Ohio which would result from the construction of the proposed mill would be focused in an already urban area where the principal economic center is the City of Erie, Pennsylvania.

3. The applicant intends to produce steel which would be shipped for further processing to its other plants located in or near large urban areas such as Pittsburgh, Pennsylvania and Chicago, Illinois. For this reason, construction of the proposed steel mill would tend to strengthen the employment and economic bases of such major metropolitan areas.

4. The applicant intends to produce flat and plate steel at the Lakefront Plant. Approximately 80% of the national market for such steel products is now located in the industrial belt stretching from Pittsburgh, Pennsylvania through Cleveland, Ohio and Detroit, Michigan to Gary, Indiana—Chicago, Illinois. For this reason, construction of the proposed mill would tend to strengthen the employment and economic bases of these major metropolitan areas.

5. The applicant cannot construct the proposed facility at the site of one of its nearby existing mills because the land area required is not available and because needed shipping facilities would be more expensive. The only available alternative sites are distant from the traditional "steel belt". Construction of a new mill at one of these distant sites would tend to contribute to dislocation in steel and steel-consuming industries from existing manufacturing-based cities.

6. Inability of the applicant to construct the proposed mill could weaken the competitive position of the American steel industry. In turn, a weakened domestic steel industry could contribute to severe losses of employment and other economic activity in major industrial cities.

In summary, the proposed steel mill is consistent with the goals of the President's national urban policy.

Sincerely,

Thomas C. Maloney
Chairman

MEMBERS: Department of Housing and Urban Development; Department of Health, Education and Welfare; Environmental Protection Agency; Department of Agriculture; Department of Commerce; Department of Labor; Department of Transportation; Community Services Administration; Department of Energy.

A-17A

Department of Energy
Washington, D.C. 20545

SEP 19 1978

District Engineer
Regulatory Functions Branch
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

This is in response to the Corps of Engineers transmittal of May 23, 1978, inviting the Department of Energy (DOE) to review and comment on the draft environmental impact statement on the proposed U.S. Steel Corporation Lakefront Steel Plant, Conneaut, Ohio.

We have reviewed the statement and have determined that the proposed action will not conflict with present or known future DOE programs. We have no substantive comments to offer on the statement itself.

Thank you for the opportunity to review the draft statement.

Sincerely,

W. H. Pennington, Director
Division of Program Review
and Coordination
Office of NEPA Affairs

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF COMMERCE
HARRISBURG

THE SECRETARY

August 25, 1978

Col. Daniel Ludwig
District Engineer
Department of the Army
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

It was a pleasure attending the public hearing on the Draft Environmental Impact Statement (DEIS) on Tuesday, August 22, 1978 and supporting this essential economic development for the Commonwealth with the Governor.

As per your request, we wish to submit the formal comment of the Department of Commerce for the record. A copy is enclosed with specifics, however, we wish to reserve the right for further comment upon publication of the final impact statement.

Sincerely,

Harry D. Reece

HDR/fjs

Enclosure: Comment on Draft Environmental
Impact Statement
Permit Application No. 77-492-3
with attachments

COMMENT
DRAFT ENVIRONMENTAL IMPACT STATEMENT
PROPOSED LAKEFRONT STEEL MILL U.S. STEEL CORP.
CONNEAUT, OHIO - SPRINGFIELD, PENNSYLVANIA
DEPT. OF THE ARMY - CORPS OF ENGINEERS
PERMIT APPLICATION NO. 77-492-3

Against a current national background of energy problems, econonic adjustments, declining cities, recent rises in unemployment, and increasing balance of payments deficits, which have resulted in inflation and loss in value of the dollar, new opportunities arise to wisely manage our resources, create employment-jobs-and tax base, and produce competitive goods in high productivity plant complexes built with the best available technology. Such an opportunity arises with the proposed new U. S. Steel mill, a greenfield opportunity that comes along only rarely to an area, state, and region. In the past 10 years in Pennsylvania only three such complexes readily come to mind - the VW auto assembly plant in Westmoreland County, the Pittsburgh Plate Glass float glass plant in Cumberland County, and the Procter and Gamble paper products plant in Wyoming County. These modern complexes producing products competitively for the future were built on greenfield sites reconciling successfully all the myriad problems associated with these large complex developments from environmental dilemmas through engineering and technological factors to human advancement. We would now like to comment further on this new opportunity as presented chronologically in the statement.

Impact Statement Page Number

i

Employment impacts, in step 1 alone, both operation and construction employment represent peaks of over 5,000 and 10,000 employees respectively. This would place this proposed mill as one of the largest facilities in the state in the top class of plant size with 1,000 or more employees. This group totaled 151 plants in 1976 out of a state population of over 16,000 manufacturing establishments.[1] Also, the direct employment places the mill in the top 31 plants in the primary metals industry in Pennsylvania. The primary metals industry in Pennsylvania, therefore, could increase its job opportunities by over 5,000 or 3 percent over the 1976 figure.

In order to meet anticipated construction schedules and avoid bureaucratic delay, as expressed as a priority for government by President Carter, every attempt should be made by all involved parties to meet requested schedules and avoid further unnecessary and costly schedule changes. The resultant inflation impacts which are currently adversely affecting the United States are hampering our ability to compete effectively in world markets.

ii

Since best available control technology (BACT) and lowest achieveable emmission rate (LAER) environmental regulations are to be used in protecting the environment, this facility should be a show case for the future on how these new stringent standards help reconcile environmental problems. It appears in the total report that every effort has been made to address this phase of the proposed development.

iii(1)

Basic steel products of plates and sheets will supply essential raw materials to many other industries at competitive prices afforded by high technology and productivity designed into the mill.

1 See Bibliography at end of paper for all numbered references.

This will help keep steel as a hallmark in Pennsylvania's future as the Keystone State as it has been since colonial days. Recent figures[2] show primary metals industries in Pennsylvania in 1976 leading the nation with almost 190,000 employees and a payroll of $2,974,100,000. The value of shipments was $15,007,400,000 and the value added by manufacture $5,885,300,000. These statistics are all higher than any other state, and this mill could be vital in maintaining that lead.

iii(3) Actual plant acreage is small compared to total site acreage allowing more open space and green belt than most industries in the Commonwealth. Provision is being made and plans do adequately address the environmental factors of erosion, solid waste, air, noise, and water factors.

Although some sections of Turkey Creek are to be abandoned due to construction it is not unusual for large scale developments to alter regional microenvironmental factors as is the case with attempts by the Corps of Engineers to keep the beaches and access to Presque Isle from changing due to natural environmental processes. Many changes have and will continue to take place including bluff erosion in the environmental background of the region and world since such has been the historical development of the planet since Year 1, and will continue in the future. The environment and topography are dynamic and not static. The lake we enjoy was part of that changing process.

iv(1) Secondary impacts from plant purchases will provide needed orders to other industries in the state and county providing diversity in the county industry patterns and strength for the future while improving the job climate and tax base.

v(4) Steel industry satellite operations potential fits in well with the economic plans for the future of Pennsylvania and the Commerce Department welcomes the opportunities it will provide in further providing for jobs for our citizens and tax base for government services. This is vital and basic in view of current assault on our industrial base by the "sun belt" and continued outmigration of our population.[3] Since the steel industries wages are among the best it is also desirable to pursue this development in order to strengthen our lag in personal income in order to further the economic well being of our citizens.[4]

vii(12) Regarding the cost of living, it is obvious that new high productivity production of steel will be helpful in slowing the acceleration of costs in this basic segment of our economy to the benefit of our citizens.

ix(20) Since most of the property is in an abandoned status with many scars of past use the project holds the potential for upgrading the land use aspect by development into a productive unit in our economy.

xi, xii, xiii, xiv Environmental impacts and changes are inherent in such a proposed development but regulations to protect the environment govern and provide the background to make just such a proposal possible and desirable.

xiv, xv, xvi Secondary changes in the area affecting different communities and minor civil divisions in different ways can and should be handled by proper planning and local response such as zoning as to how each area's personality is to develop. This has been the normal procedure throughout Commonwealth history.

As to alternatives, a close evaluation of all factors strongly suggests, and we therefore recommend, that a conditional permit would be the desirable alternate since it provides for development while making adequate provision for taking care of the many problems associated with such a major undertaking in advancing the county, state, and nation.

xvi

DOA permits for harbor development are a logical next step in commerce development on Lake Erie and a vindication of investment in the seaway and maritime developments.

xxxx

The market impact for coal for the plant is in keeping with the "Coal Development of the Commonwealth."[5] "It is Commonwealth policy to promote sound and sustained growth in bituminous and anthracite production and use in Pennsylvania to meet the increased long-term demand in a manner which insures: improved health and safety; jobs and income for miners; higher productivity and stability for the industry; an assured adequate fuel supply for our communities, citizens and industries; meeting environmental regulations and standards essential to preserve the quality of our air, water, fields, and mountains." The proposed facility is the ideal type of project to further this policy, having both significant impact on the market while using best available control technology.

1-35

By-product production and marketing into commercial products indicate a commitment to efficient recycling of significant amounts of raw materials into useful products while helping productivity and cost factors measurably. Those components recovered and processed into the fuel phase of the plant also help provide energy efficiency - a must in the current national energy conservation movement.

1-48

Slag disposal includes phases of recycle for road building programs which are important for completing the core system of Pennsylvania highways.

1-56

Central fire station and emergency medical facilities will help to minimize the impact of these types of service on local and area facilities.

1-115

Water recycling facilities show significant contribution to the conservation effort designed into the proposed mill and improvement over many existing systems.

1-133

Water loss factors are largely due to heat control measures to protect the environment.

1-134

Disposal sites on the property appear designed to not only provide for efficient close-by disposal on the property but also to provide satisfactory solid waste disposal while affording some site improvement.

1-257

Fill and diversion of Turkey Creek is not unreasonable for a project of this size and is necessary for this type of development. This is not a national area of unique parameters.

1-274

Construction workers and craft support are essential and provide an opportunity for employment in Western Pennsylvania by reducing high levels of unemployment in the construction trades.

1-305

Federal, state, and local interagency coordination has been a prerequisite and has provided essential communication on the project.

1-330

1-333 Regulatory Requirements as outlined in this section show the myriad of constraints that must be satisfied or reconciled in order to start and complete the project. This is ample proof that most all factors involving regulatory overlays have already more than adequately been addressed.

2-18, 19 Unemployment trends can be updated with recent data releases.[6-7] An analysis of BES data on civilian labor force factors by SMSA with a state summary show that since mid-1977 the state has not been able to achieve lower rates of unemployment than the United States. This unemployment problem first developed during the 1974-75 recession. Since the state has historically lagged the United States in recession recovery, this economic facet was not unexpected. For the most recent month, July 1978, the state had the largest increase in unemployment in the nation and the national figure was increasing. The Erie SMSA has experienced similar problems. Unemployment rates in the Erie SMSA more than doubled from the 1974 rate of 4.4% unemployment to the 1976 rate of 9.1% unemployment. The 1977 rate for the Erie SMSA was still at an unacceptably high rate of 7.6%. The 1977 unemployment rate for the Erie SMSA represented some 9,100 persons. In June 1978 there were still 8,000 persons unemployed.[7] This total unemployment represents almost the total for the full scale operation employment level for the proposed new steel mill for just Erie County alone at the present time.

2-24, 25 The unemployment problem in Pennsylvania can be directly attributed to the drop in manufacturing employment, especially during the last ten years (1967-1976).[8] Manufacturing employment has generally been declining statewide from almost 1.5 million employees to below 1.25 million employees. This represents a decline of over 16% over the ten year period. Wages and salaries generally increased from 1967 until the 1974-75 recession and have been fairly level since that period. With inflation now churning the economy and the balance of payments badly affecting the value of the dollar, this leveling of wage and salary dollars has a severe drag on the economy of the state which historically and recently still heavily depends on this sector for her economic well-being. Erie County[9] pretty well follows the state problem regarding manufacturing employment and manufacturing wage and salary figures, but manufacturing employment in the county fell more drastically after the 1974-75 recession. Recent releases of data[10] for 1977 show the Commonwealth still has many areas classified as labor areas of substantial or persistent unemployment. This includes Erie County and part of Erie city. These trends and statistics dramatically show the need for addressing the problems of unemployment and weakness in the wage and salary structure of manufacturing employment. As a result of the problem the Bureau of Employment Security in the state has been active in serving clients resulting from the problem.[11] Erie County by far has the largest number of new applicants and renewals in District 9 of the northwest section of Pennsylvania, supporting the above analysis. The total effect of decline in manufacturing employment is indicated by the multiplier effect which indicate the full impact of the growth or decline in the employment in the basic manufacturing sector. A recent paper in the AIDC Journal[12] discusses this effect in detail in an article in Vo. XIII, No. 3, July 1978. It concludes that employment multiplier generally range in value from 1.7 to 3.0. This means that the ultimate advance in regional income and employment tends to be a multiple of the initial increase

at the new facility and of the above stated magnitude.

2-358 Since the other side of new employment and jobs is tax base, it is important to consider the influence of new industrial activity on state tax revenues. Competition for jobs and tax base is now more competitive than in the recent past and has broadened to an international scale. Offshore competition from Puerto Rica and other areas such as Canada in a race for economic base is tough competition and this competitive climate is now expanding and accelerating. The major state tax impacts are potential new revenues in personal and corporate income and sales tax, while increasing payments into the unemployment compensation program. Because the most recent release from the Pennsylvania Department of Revenue[13] dated June 1978 shows the general fund total and most components including corporate net and personal income running under estimates, it is obvious that any course of action that would increase income be given top priority. This up-to-date fiscal year profile highlights this problem which has recently been referred to by the Governor at the cabinet-level and in the press.

2-56a Land use patterns in Erie County generally show the county with 43% commercial forest land as part of an Agricultural land use pattern that aggregates almost 90% of the county land area. Against this background it is obvious that a proposed mill property that only accounts for one half of one percent of the total county land area will not have a measurable effect on the land use of Erie County. It is, therefore, not unreasonable to develop a new steel facility as a heavy industry as far as balance in the land use patterns of the county are concerned.

3-2 It also appears that the proposed land uses will be in general conformity with most planning and zoning.

4-9 It is significant to note that the company is going to give area residents hiring priorities since this philosophy should help lagging personal income profiles in the county and state.

4-11 The impact on unemployment in the area to a 4-6% level still leaves a rate of unemployment that is unsatisfactory and the area would still qualify for state financing under The Pennsylvania Industrial Development Authority, or PIDA. The legislative program has been available in Pennsylvania since 1956 and has as its primary objective the fact that PIDA "shall exist and operate for the public purpose of alleviating unemployment with its resulting spread of indigency and economic stagnation by the promotion and development of industrial and manufacturing enterprises and research and development facilities in those areas of the Commonwealth in which conditions of critical unemployment currently or may from time to time exist." The Act is designed to promote the "health, safety, morals, right to gainful employment, business opportunities and general welfare of the inhabitants of Pennsylvania." Since private investment in the new facility will go a long way in achieving significant reductions in unemployment the effect will be in the long run to relieve the taxpayers through PIDA of some of this burden.

4-47 There is a direct interrelationship between school enrollments, outmigration, work force, and unemployment. Although the future is not clear as to what the relationships will produce in final configurations in the future, it is a fact that new steel mill employment will tend to provide stability to the economy and tend to reduce the effects of under and unemployment.

4-84

It is interesting to note that Springfield is expected to maintain its basic rural character. This is the experience of the Commerce Department in the location of large plants in the Commonwealth by Procter and Gamble, Pittsburgh Plate Glass and the new Volkswagen plant to date.

BIBLIOGRAPHY

COMMERCE COMMENT - PROPOSED LAKEFRONT STEEL MILL

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(3) Social Indicators 1976 - U. S. Department of Commerce, Bureau of the Census.

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(5) Coal - A Commonwealth Coal Development Program, Governor's Energy Council.

(6) Pennsylvania Total Civilian Labor Force Unemployment and Employment 1970-1977. Labor Market Information, Commonwealth of Pennsylvania, Bureau of Employment Security, Department of Labor and Industry, June 1978 (Pennsylvania Summary plus Erie SMSA).

(7) Pennsylvania Employment and Earnings, July 1978, Vol. XXIII, No. 7 Commonwealth of Pennsylvania, Department of Labor & Industry, Bureau of Employment Security.

(8) Statistics for Manufacturing Industries 1976 - M-1-76, Commonwealth of Pennsylvania, Department of Commerce, Bureau of Statistics, Research and Planning.

(9) Pennsylvania Industrial Census, Erie County. M-5-76, Commonwealth of Pennsylvania Department of Commerce, Bureau of Statistics, Research and Planning.

(10) Area Trends in Employment and Unemployment, U.S. Department of Labor, Employment and Training Administration. August - December 1977.

(11) Monthly Activity Report of Services Provided to individuals, Cumulative from Oct.1978 through June 1978, Commonwealth of Pennsylvania, Department of Labor and Industry, Bureau of Employment Security.

(12) Employment Multipliers as indicators of Economic Growth and Development, Richard R. Carroll, July 1978 Vol. XIII, No. 3 AIDC Journal.

(13) Revenue - Statistical Data Sheet June, 1978, Vol. 20, No. 12, Commonwealth of Pennsylvania, Departmnet of Revenue, Bureau of Research and Statistics.

(14) Pennsylvania Business Survey, July 1978, The Pennsylvania State University, College of Business Administration.

(15) Pennsylvania Business, July 1978, Bell of Pennsylvania.

SUMMARY

Pennsylvania's general business activity and long term growth[15] have never fully recovered up to the long term trend. Major problems still exist in total employment and unemployment when compared with the United States,[14] although total factory payrolls and migration tend to mask the full effects of these impacts. Recent years have seen steel mills closing in the state which could no longer compete in international markets, such as Alan Wood, Midvale-Heppenstall, and Phoenix Steel. New manufacturing facilities with resultant jobs and tax base, such as the proposed new steel mill, could go a long way in starting a change in the state's basic economic profile. Opportunities such as this are rare in any decade of economic development.

Sincerely,

Norval D. Reece
Secretary
Pennsylvania Department of Commerce

August 1978

County Commissioners Office
25 WEST JEFFERSON STREET
JEFFERSON, OHIO 44047
216/576-2040

COUNTY OF ASHTABULA

BOARD OF COUNTY COMMISSIONERS
THOMAS NASSIFF
ALFRED W. MACKEY
PETER IAROCCI
MRS. BETTY COWLES

July 11, 1978

Department of Engineers
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Sir:

Enclosed please find a copy of the Resolution Endorsing the Construction and Operation of the United States Steel Corporation's Lake Front Steel Mill, etc. which was adopted by the Board of Ashtabula County Commissioners at their meeting of July 10, 1978.

Sincerely,

ASHTABULA COUNTY COMMISSIONERS

Betty Cowles, Admr./Clerk

BC:jc

Enc.

RESOLUTION ENDORSING THE CONSTRUCTION AND OPERATION OF THE UNITED STATES STEEL CORPORATION'S LAKE FRONT STEEL MILL AS DESCRIBED IN THE DRAFT ENVIRONMENTAL IMPACT STATEMENT PREPARED BY THE U.S. ARMY ENGINEER DISTRICT, BUFFALO, CONTINGENT UPON RECEIPT OF ALL NECESSARY PERMITS FROM THE U.S. ARMY CORPS OF ENGINEERS; THE U.S. ENVIRONMENTAL PROTECTION AGENCY; AND ALL OTHER FEDERAL, STATE, AND LOCAL AGENCIES

The following Resolution was presented by Nassief who moved its adoption and seconded by Iarocci:

WHEREAS, the United States Steel Corporation is considering the construction of a steel making facility in Ashtabula County, Ohio and Erie County, Pennsylvania, and

WHEREAS, the construction and operation of this facility would positively impact the Ashtabula County economy, and

WHEREAS, any negative impacts of such steel making facility can be mitigated using existing technology, and

WHEREAS, U.S. Steel Corporation will obtain pollution and construction permits showing that the proposed mill will operate within the guidelines of existing federal, state, and local standards.

NOW, THEREFORE, BE IT RESOLVED, By the Board of Commissioners of Ashtabula County, Ohio, that the proposed construction of a Lake Front Steel Mill in Conneaut, Ohio by the United States Steel Corporation be endorsed and that this endorsement be forwarded to the U.S. Army Engineer District, Buffalo.

On Roll of the Roll, Nassief voted, 'Yea'; Iarocci, 'Yea'; Mackey, 'Yea'.

Whereupon the Resolution was declared adopted.

Adopted: 7-10-78

A-133

C E R T I F I C A T E

This is to certify that I, Betty Cowles, as Administrator-Clerk of the Board of Commissioners of said County of Ohio, have compared the foregoing copy of resolution with the original resolution now on file in this office of said County on the 10th day of July, 1978 and that the same is a correct and true copy of said resolution.

In witness whereof, I have hereunto set my hand this 10th day of July, 19 78.

Admr./Clerk, Board of County Commissioners

984 WATER STREET

MEADVILLE, PA. 16335

CITY OF MEADVILLE
PENNSYLVANIA

OFFICE OF
City Manager

August 10, 1978

United States Corps of Engineers
District Office
1776 Niagara Street
Buffalo, N.Y. 14207

Dear Sirs:

I am writing in follow-up to action taken by the Council of the City of Meadville to transmit the Resolution adopted unanimously supporting the construction of the proposed U.S. Steel plant at Conneaut, Ohio.

As stated in the resolution the City of Meadville wishes to go on record in support of this project. The City is mindful of the economic benefit as well as the environmental impact of the proposed facility.

Sincerely,

David L. Wendtland
City Manager

DLW/lb

RESOLUTION: Proposed U.S. Steel Plant at Conneaut, Ohio
PURPOSE: Support Development of U.S. Steel Plant at Conneaut, Ohio
Date: August 8, 1978

COUNCIL CHAMBER
MEADVILLE, PENNSYLVANIA

BY Miss Barco DATE August 8, 1978

RESOLVED, by the Council of the City of Meadville,

THAT:

WHEREAS the United States Steel Corporation proposes to build a new facility at Conneaut, Ohio; and

WHEREAS, this facility when constructed will employ 8,400 people; and

WHEREAS, a high priority of the Council of the City of Meadville is the economic wellbeing of the City through the provision of job opportunities and industrial development; and

WHEREAS, the development of the U.S. Steel Corporation facility at Conneaut, Ohio, will provide both direct economic benefits to the City of Meadville and vicinity through the provision of employment opportunities and indirect economic benefits through the attraction of secondary or "spin-off" industries and job opportunities; and

WHEREAS, additional, a high priority of the Council of the City of Meadville is the protection of its environment, including natural and human; and

WHEREAS, sufficient Federal, State and local laws and regulations exist for the purpose of controlling the impact of the facility and protecting the natural and human environment.

NOW, THEREFORE BE IT RESOLVED by the Council of the City of Meadville that the Council supports the development of the United States Steel Corporation facility at Conneaut, Ohio; and

BE IT FURTHER RESOLVED, that copies of this resolution be transmitted to our State Senators and Representatives, our U.S. Senator and Congressman and the Army Corps of Engineers.

Crawford County Tourist Association
Court House Meadville, Pennsylvania 16335 *Phone (814) 336-1151 ext. 54*

Betty Dudenhaver
Executive Director

August 11, 1978

Col. Daniel D. Ludwig
District Engineer
Buffalo District
Corps of Engineers
1176 Niagara Street
Buffalo, NY 14207

Dear Colonel Ludwig:

As the designated tourist promotion agency in Crawford County, the Crawford County Tourist Association has determined that not only from a tourism view-point, but from real estate, transportation, and economic viewpoints which are all affected by tourism, the building of the U.S.Steel plant on the PA-Ohio border would be a tremendous asset.

Since the tourism industry is the 3rd largest industry in Crawford County and 2nd in PA and affects all types of businesses either directly or indirectly, bringing in $26.5 million in 1976, the CCTA's Board of Directors would like to go on record as being in favor of the proposed plant.

We are pleased to enclose a "Crawford County packet" of brochures which will give you an idea of some of the businesses that could be affected directly by an influx of people associated with the plant to the area.

If you have any questions with regard to the CCTA's position, please let us know.

Sincerely,

(Mrs.) Betty Dudenhaver
Executive Director, CCTA

Enclosures
BD/d
Copy: Edward Edinger
Crawford County Planning Director

"Vacation Fun for Everyone"

Re: Proposed US Steel Mill
Permit application
Comment date.

Sept 1, 1978
1057 W 5 St
Erie, Pa. 16507

Dear Colonel Ludwig

As an individual, I am against your granting permits to US Steel for the work on Turkey Creek etc

Although the DEIS is very thick and contains much data, some of the data is not correct.

They spent much time preparing for the document, but the document is incomplete, and leaves many questions unanswered.

I find it to be vague in some instances.

There are many questions regarding the permit. It is not my decision to point them out to you, as I am sure you will hear about or read about many shortcomings.

So until the questions are answered in a satisfactory manner, please do your job and say no, at least not at this time.

sincerely Bob Weinhofer

P.S. Why don't they clean up all their other sites before you grant them a permit for a new site

5968 Glade Drive
Erie, Pa. 16509

Colonel Ludwig
U. S. Army Corps of Engineers

Dear Sir:

There have been claims and counter-claims about the proposed steel mill at Conneaut, but some things are certain: the air, water, land, flora and fauna will be adversely affected; in short, the environment. That includes the people, the people living here; not the managers of U. S. Steel, nor officers of regulatory agencies, nor progress-as-usual politicians in Harrisburg, Columbus or Washington.

This mill looms as a potential disaster for local people--excepting those who hope to sell land at a high price and move south, and those who hope to win the employment lottery at the mill(perhaps trading some part of their life-spans for a good paying job).

Man damages nature at his peril. Death and destruction for a temporary and partial economic advantage: miles of lovely beaches, rich vineyards abounding along the shore, a little creek that flows to the lake--not to mention the air we breathe, the water we drink, and the food we eat; the threat to these necessities, amenities, and integral components of our way of life are intolerable concomitants of the proposed project. The protection against pollution is no pollution.

The expected secondary impacts are important, but the environmental question is decisive.

Sincerely yours,

Gary Gara

A-106

Sept. 1, 78

Dear Sir:

Regarding the proposed steel mill in Erie: Since the air seems, by meetings & lectures, contaminated such a large plant would cause more harm than good. Both the water & air qualities are much better than they have been in many years. The fishing has greatly improved & details like these should be considered. A few people against profit from the venture, but what about the rest of the population. Would be nice after the mill moves in to visit the location.

Sincerely yours
Wm. L. A. Hutchinson
1657 W. 5th
Erie, Pa. 16507

Janice Gustafson
Box 28 Towers
Edinboro State College
Edinboro, Pa. 16412

September 5,1978

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, N.Y. 14207

Colonel Ludwig:

Concerning the proposal of building the world's largest steel plant 20 miles from the largest Pennsylvania state park, I (as a recent summer visitor to the park) feel that anyone with common sense can see the plant should not be built in that location.

I do believe a concerned constituent, Mark Montefiori, 1009 W. 36th Street, Erie, Pa., said it best in his September 5th letter to you:

> Some one has to stand up and defend our environment. Building the world's largest steel plant 20 miles up current and upwind from one of the most beautiful parks in the nation is absolutely absurd.
>
> It's a crime against the people who enjoy it, a crime against nature, and a crime against God.

Sincerely,

Janice Gustafson

455 Middle Rd
Conneaut, Ohio 44030
Sept 6, 1978

Col. Ludwig
U.S. Army Corps of Engineers.
Buffalo, N.Y. 14200

Dear Sir:

Maybe this is the time for the silent majority to be heard. We are tired of outsiders loudly voicing their objections to the MILL U.S. Steel is proposing to build on the Conneaut/PA line. Those of us who were born & raised in this area welcome the Mill. For years we have looked forward to progress and employment for all. The Sierra Club is making loud objections-yet none of us ever heard of the Sierra Club before this Mill talk began. They certainly haven't done anything for our community. Turkey Creek has never provided food for our hungry in any great quantity. Yet now it is so important. Just so a handful of fisherman can enjoy their sport. After listening to the debates on TV and hearing all the objections by teachers and students alike-plus some farmers- I can't see where any of them are offering employment to our employable. Again I wish to say that we welcome the MILL.

Sincerely,

Mrs. Gertrude Hirsimaki
455 Middle Rd
Conneaut, Ohio 44030

September 7, 1978

The Department of the Army
U. S. ARMY ENGINEER
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

I wish to express my opposition of the proposed U. S. Steel Mill to be constructed on the Pa. - Ohio line.

Being an avid outdoor person, I know what the present condition of our Lake Erie is. It's beautiful. Out on the lake not even a mile, the water is so clear and clean that you can see the fish swimming and the reflection of the sand below. It's shameful that U. S. Steel would even consider building here and ruining our beautiful lake which we citizens of Erie and the surrounding area are so very proud of.

No matter how modern the design of this complex, we will still have enormous amounts of air and water pollution. Having to ride past National Forge every morning on my way to work is a perfect example. I can see how much filth is still being put into the air, even after that company was forced and spent thousands of dollars installing pollution control devices. Gentlemen, no human or any living creature should be forced to inhale this poison, and U. S. Steel will be at least ten times larger than National Forge, if not bigger. A steel mill is not a steel mill if it doesn't pollute.

On a recent trip to Canada, I happened to pass through the Lackawanna area. What type of pollution control devices does Bethlehem Steel have. Evidently none, because if they did, I'm certain the basic color of homes, buildings, etc. and everything in that general area would not be orange. What about U. S. Steel in Pittsburgh. On days of air stagnation, you can't even see the city from the Steel building. Why have air stagnation reports anyway? Why subject life to inhale these poisons? How can man do these things to destroy this beautiful environment?

Please, I urge you, think these things over before you decide to issue the steel mill permit. The lives of many people, our beautiful lake and our greenfield farm lands are at stake here. We do not want them destroyed.

Thank you for your time and attention.

Sincerely,

Colette Piotrowicz

COLETTE PIOTROWICZ
644 East 11 Street
Erie, Pa. 16503

F-197

APPENDIX "B"

EIS Coordination: Cultural Resources;
Land Use Plans, Policies, and Controls;
Effluent Limitations and Plume Modeling;
Prime and Unique Farmlands; Socio-Economic
Baseline Evaluation; and Air Quality.

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U. S. Steel Corporation

SEP 26 1977

Cultural Resources

Dr. John J. Cotter
National Park Service
Mid Atlantic Region
143 South Third Street
Philadelphia, PA 19106

Dear Dr. Cotter:

We are currently preparing a draft environmental impact statement (EIS) on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

As a part of the data input for the EIS, we have requested the U. S. Steel Corporation to perform cultural resource inventories at the proposed Conneaut Lakefront plant site. These studies were recently completed and a copy of their findings is enclosed for your review and evaluation.

We would be most pleased if you would reply . . soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Encl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

25 October 1977

Dr. John J. Cotter
National Park Service
Mid Atlantic Region
143 South Third Street
Philadelphia, PA 19106

Dear Doctor Cotter:

Please refer to our recent correspondence, dated 26 September 1977, concerning an application by the U.S. Steel Corporation for a Department of the Army permit to construct a steel manufacturing complex near Conneaut, Ohio.

The "Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study Area)," submitted to us by the A.D. Little, Inc. on behalf of the U.S. Steel Corporation, is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Daniel D. Ludwig

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

United States Department of the Interior
NATIONAL PARK SERVICE
MID-ATLANTIC REGION
143 SOUTH THIRD STREET
PHILADELPHIA, PA. 19106

IN REPLY REFER TO:

11 November 1977

Daniel D. Ludwig

Colonel, Corps of Engineers
District Engineer
Buffalo District
1776 Niagra Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The delay in answering your letter is attributable to the fact that Dr. Cotter has retired and I have just come aboard. I have read the report(Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties,etc.) and I am prepared to make the following observations:

1. The remote sensing approaches used by the authors of this report are generally sound with the possible exception of historically involved contact sites. These ,however, could be picked up by field testing invelving magnetometer survey,etc.

2. Prehistoric sites generally respond predictably to carefully outlined ecological factors.

3. P. 12 contains the real caveats of this strvey; they are serious

exceptions. The area appears to be previously undersurveyed.

4. The attempt made by the authors,however, does have real value in future cultural resource management by the area and is of great importance.

In sum, I find the document to be of some significance in future planning. More such surveys are needed in similarly homogeneous areas of the nation.

Sincerely,

David G. Orr

Regional Archeologist

MARO/NPS

United States Department of the Interior

NATIONAL PARK SERVICE
Office of Archeology and Historic Preservation
Interagency Archeological Service - Atlanta
1895 Phoenix Boulevard
Atlanta, Georgia 30340

MAY 25 1977

Col. Daniel D. Ludwig
District Engineer
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Col.Ludwig:

We have reviewed the report entitled "Archaeological Reconnaissance and Sub-Surface Investigations of the Proposed United States Steel Corporation Greenfield Steel Plant Ashtabula County, Ohio, Erie County, Pennsylvania" by David S. Brose.

Copies of staff reviewers' comments are enclosed.

Sincerely yours,

Harry G. Scheele

Harry G. Scheele
Acting Chief, Interagency Archeological Services-Atlanta

Enclosures

UNITED STATES GOVERNMENT

Memorandum

: Supervisory Archeologist, Interagency Archeological Services-Atlanta

DATE: November 22, 1977

: Archeologist, IAS-A

: Review of "Archaeological Reconnaissance and Sub-Surface Investigations of the Proposed United States Steel Corporation Greenfield Steel Plant Ashtabula County, Ohio, Erie County, Pennsylvania" by David S. Brose.

The report is generally adequate in that the literature search appears complete, the survey was fairly complete, the sites were tested thoroughly, and National Register recommendations are made. I have a few critical comments, however, about this monograph. Most of the problems could have been resolved with careful editing.

One problem is that in places the writing is confusing. A good example appears on p. 144. "A total of 6,723 test excavation units revealed no archaeological evidence for prehistoric or historic occupation. Sixteen prehistoric archaeological sites were located during these systematic investigations." The sentences do not follow each other in a clear or logical manner.

In the chapter called "Historical Background" many sites are mentioned, however, it is not always evident in that section which sites are inside or outside the project area. To check this out, one must consult the last part of the report where the sites in the project area are specifically discussed.

Some other problems include occasional typographic errors (e.g. On p. 103 "gut-tempered" sherds are discussed) and omissions (e.g. the reference to Aetzen 1974 is not in the bibliography).

I wonder why the sites are only named, but not numbered.

Furthermore, while the project area consists of 5,500 acres, only 4,300 acres were surveyed. What about the other 1,200 acres? Were these acres missed because of the sampling strategy, lack of time, existing structures or roads, oversight?

Yet another problem has been thoroughly documented by another reviewer. That is, some of the site National Register eligibility recommendations are not always consistent. For instance, the Bennett campsite is on a p. 28 list of ineligible sites. That site, however, is not on another list of ineligible sites that appears on p. 144. It would have been useful to include National Register recommendations on Table 1.

Finally, my copy suffers from very poor plate reproduction. Presumably the original copy has excellent plates. But when they are nearly completely obscured, the reviewer's task is less than ideal.

Harry Schenawolf

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

UNITED STATES GOVERNMENT

Memorandum

TO : Supervisory Archeologist, Interagency Archeological Services-Atlanta

DATE: November 10, 197

FROM : Intern Archeologist, Interagency Archeological Services-Atlanta

SUBJECT: Comments on "Archaeological Reconnaissance and Sub-Surface Investigations of the Proposed United States Steel Corporation Greenfield Steel Plant, Ashtabula County, Ohio Erie County, Pennsylvania" by David S. Brose

There are several discrepancies and ambiguities that require further attention and/or additional revisions if this report is to be of value as a planning tool.

Page 2 of the introduction states that "6,723 subsurface test units were excavated, resulting in 16 prehistoric archeological sites being identified within the proposed project area". Page 63, however, states that "the research strategy as implemented involved the excavation of culturally sterile 6,723 subsurface test pits... During the course of these investigations some 16 prehistoric archeological sites were encountered in the test excavation of an additional 32 square meter test units within the project area". The text further states (page 144) that the "6,723 test excavation units revealed no archeological evidence for prehistoric or historic occupation... 16 prehistoric archeological sites were located during these systematic investigations". It is never made explicit how these 16 sites were identified. If the 6,723 test units yielded negative results, how could 16 archeological sites be identified? Were they encountered during the subsurface testing of 6,723 units or were they located and identified on the bases of the additional 32 test pits?

The introduction also states that "Archeological remains of 7 historic structures were located within the proposed project area." The author further states (page 28) that "none of the historic archeological sites identified represent significant cultural resources and none have yielded archeological remains." Which is the proper statement concerning the presence or absence of historic archeological remains identified within the project area?

The report contains several discrepancies regarding the eligibility statuses of the prehistoric sites identified, located and evaluated during the course of this survey.

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Page 13 states that excavations are warranted at the Elmwood Road Site because "the site represents one of the few Early Woodland village sites in Northern Ohio." Pages 92 and 144, however, state that the site has little research significance because "less disturbed archeological sites of the same temporal and functional type are now known to exist in the region."

The Bennett Campsite is considered ineligible for the National Register (page 28). The site, however, is considered eligible on pages 131 and 147.

The absence of the Raccoon Creek Site in the listing of those sites considered ineligible (page 28) leads the reader to believe that this site is eligible. However, pages 98 and 144 consider the site to be ineligible on the basis of its "degraded and disturbed condition."

The Anthony Ridge Site is considered ineligible on pages 142 and 151. However, pages 144 and 28 do not list this site as ineligible.

The summary on page 152 enumerates those sites which appear "too fragmentary or disturbed to be eligible for the National Register." Five of the sixteen sites are considered to be in this category. In view of the above noted ambiguities in the evaluation of these sites, this number of ineligible sites is erroneous.

There are a number of typographical and/or editorial errors which require further consideration prior to the publication of the final form of this report.

Ruff Road Site should be changed to read Rudd Road Site on page 15.

Page 73 is upside down.

Bertram Krause (1941) is cited frequently, but is not included in the bibliography section of the report. The spelling of Krause is varied throughout the report. This should be standardized.

In reviewing and evaluating the proposed budgets included as appendices, a number of questions were raised.

- Why do the daily wage rates for field and laboratory work differ for the Principal Investigator?
- 600 hours are estimated for two research assistants, what specific duties are to be performed during this time?
- Detailed expenditure justifications for supplies, equipment, etc. should be included in the proposed budget.

Sandra J. Forney

Sandra J. Forney

United States Department of the Interior

NATIONAL PARK SERVICE
Office of Archeology and Historic Preservation
Interagency Archeological Service - Atlanta
1895 Phoenix Boulevard
Atlanta, Georgia 30349

IN REPLY REFER TO:
H2219-SER-PIA

NOV 20 1981

Colonel Daniel D. Ludwig
District Engineer
Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

We have reviewed Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study Area) by David S. Brose, Bernard Werner, and Renata B. Wolynec and find it acceptable as a reconnaissance level investigation. One reviewer noted a few editorial items that should be considered in the final version. Copies of the reviewers' comments are enclosed for your consideration.

Sincerely yours,

Bennie C. Keel

Bennie C. Keel
Chief, Interagency Archeological Services-Atlanta

Enclosures

OPTIONAL FORM NO. 10
JULY 1973 EDITION
GSA FPMR 101 CFR 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Supervisory Archeologist, Interagency Archeological Services-Atlanta

DATE: November 28, 1977

FROM : Archeologist, Interagency Archeological Services-Atlanta

SUBJECT: Review of "Final Report on the discriminant A..aeological Analysis of E ie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study Area)" by David S. Brose, Bernard Werner, and Renata B. Wolynec

This report systematically demonstrates where cultural resources are likely to occur within the study area. The limitations of the data and results have been clearly expressed. Of course, the results should not be interpreted as a substitute for any additional reconnaissance and survey. Rather, the study really indicates the need for further field work to modify or verify the results.

On pages 5 and 7 the authors indicate that there is no criteria available for evaluating historic and prehistoric properties in terms of National Register eligibility. They should refer to National Register guidelines on nominating procedures for this information.

On page 4 Bertram Kraus (e?) is spelled "Kraus", but on page 7 the name is spelled "Krause." "Erie" Johannesson on page 6 should be "Eric".

On page 22 a sentence begins "In some of the more recent ecologically oriented archaeological studies..." I think reference documentation is called for at that point.

Harry G. Scheele

Harry G. Scheele

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

OPTIONAL FORM NO. 10
JULY 1973 EDITION
GSA FPMR 101 CFR 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : Supervisory Archeologist, Interagency Archeological Services - Atlanta

DATE: November 27, 1977

FROM : Intern Archeologist, Interagency Archeological Services - Atlanta

SUBJECT: Review Of "Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study)"

The report represents an adequate and extremely informative treatment of cultural resources in the study areas.

The establishment of predictive models for settlement locations, based on statistical methodologies, is an excellent approach. The results of this "scientifically valid" study are certainly of value for purposes of further development planning in the area.

Sandra Jo Forney

Sandra Jo Forney

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U. S. Steel Corporation

SEP 27 1977

Merril D. Beal, Regional Director
Mid West Regional Office
National Park Service
1709 Jackson St.
Omaha, Nebraska 68102

Dear Mr. Beal:

We are currently preparing a draft environmental impact statement (EIS) on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

As a part of the data input for the EIS, we have requested the U. S. Steel Corporation to perform cultural resource inventories at the proposed Conneaut Lakefront plant site. These studies were recently completed and a copy of their findings is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Incl
as stated

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

25 October 1977

Merrill D. Beal, Regional Director
Mid West Regional Office
National Park Service
1709 Jackson Street
Omaha, NB 68102

Dear Mr. Beal:

Please refer to our recent correspondence, dated 26 September 1977, concerning an application by the U.S. Steel Corporation for a Department of the Army permit to construct a steel manufacturing complex near Conneaut, Ohio.

The "Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study Area)," submitted to us by the A.D. Little, Inc. on behalf of the U.S. Steel Corporation, is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Incl
as stated

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

United States Department of the Interior

NATIONAL PARK SERVICE
Midwest Archeological Center
Federal Building, Room 474
100 Centennial Mall North
Lincoln, Nebraska 68508

IN REPLY REFER TO:

L7619

November 4, 1977

COL. Daniel D. Ludwig
District Engineer
U.S. Army Corps of Engineers, Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear COL. Ludwig:

Regional Director Beal has forwarded your letter of October 25 (ref.: NCBCO-S Re: 77-492-3) to this office for reply.

The Midwest Archeological Center participates in the interagency review process by reviewing draft and final versions of environmental impact statements and environmental assessments, but does not routinely review other planning documents generated by external agencies. Reviews such as you request are more properly within the purview of the Interagency Archeological Services program of the National Park Service, and we have accordingly taken the liberty of forwarding your letter and the accompanying draft report to Dr. Benny Keel, Chief, Interagency Archeological Services - Atlanta, National Park Service, 1895 Phoenix Blvd., Atlanta, Georgia 30309. I am sure Dr. Keel's office can provide the desired assistance.

Sincerely,

P. A. Calabrese
Chief

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U. S. Steel Corporation

SEP 25 1977

Dr. Thomas H. Smith
State Historic Preservation Officer
Ohio Historic Society
Interstate 71 and 17th Ave.
Columbus, OH 43211

Dear Dr. Smith:

We are currently preparing a draft environmental impact statement (EIS) on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

As a part of the data input for the EIS, we have requested the U. S. Steel Corporation to perform cultural resource inventories at the proposed Conneaut Lakefront plant site. These studies were recently completed and a copy of their findings is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Incl
as stated

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

25 October 1977

Dr. Thomas H. Smith
State Historic Preservation Officer
Ohio Historical Society
Interstate 71 and 17th Avenue
Columbus, OH 43211

Dear Doctor Smith:

Please refer to our recent correspondence, dated 26 September 1977, concerning an application by the U.S. Steel Corporation for a Department of the Army permit to construct a steel manufacturing complex near Conneaut, Ohio.

The "Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study Area)," submitted to us by the A.D. Little, Inc. on behalf of the U.S. Steel Corporation, is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Daniel D. Ludwig

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U. S. Steel Corporation

SEP 26 1977

Mr. William J. Wewer
Executive Director of the Pennsylvania
Historic and Museum Commission
P. O. Box 1026
Harrisburg, PA 17108

Dear Mr. Wewer:

We are currently preparing a draft environmental impact statement (EIS) on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

As a part of the data input for the EIS, we have requested the U. S. Steel Corporation to perform cultural resource inventories at the proposed Conneaut Lakefront plant site. These studies were recently completed and a copy of their findings is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Daniel D. Ludwig

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

25 October 1977

Mr. William J. Wewer
Executive Director of
the Pennsylvania Historic
and Museum Commission
P.O. Box 1026
Harrisburg, PA 17108

Relationship of the Proposed Project
to Land Use Plans, Policies, and
Controls

Dear Mr. Wewer:

Please refer to our recent correspondence, dated 26 September 1977, concerning an application by the U.S. Steel Corporation for a Department of the Army permit to construct a steel manufacturing complex near Conneaut, Ohio.

The "Final Report on the Discriminant Archaeological Analysis of Erie and Crawford Counties, Pennsylvania, Ashtabula County, Ohio (Secondary Study Area)," submitted to us by the A.G. Little, Inc. on behalf of the U.S. Steel Corporation, is enclosed for your review and evaluation.

We would be most pleased if you would reply as soon as possible. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Daniel D. Ludwig

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Environmental Clearance Officer
U.S. Department of Housing and Urban Development
60 East Main Street
Columbus, OH 43215

Dear Sir:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries, and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

In order to fully assess the relationship between the proposed project and the plans of other agencies, we would appreciate knowing whether or not the subject project will conform or conflict with the objectives and specific terms of existing or proposed land use plans, policies, and controls, if any, that your agency may have reviewed or formulated for the project area. An evaluation of master plans, zoning regulations, plans developed in response to the Clean Air Act and the Federal Water Pollution Control Act Amendments of 1972, or other related land use proposals of your agency, would be helpful in this respect.

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

A copy of public notice No. 77-492-3, issued by the Corps of Engineers, Buffalo District, is enclosed for your information.

We would be most pleased if you would reply by 25 August 1977. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

DANIEL D. LUONIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Ohio Dept. of Natural Resources
Fountain Square
Columbus, OH 43224
ATTN: Robert Lucas, Dept. of Interagency Coordination

Dear Sir:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

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Sincerely yours,

DANIEL D. LUONIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Office of State Planning and Development
Box 1323
Harrisburg, PA 17120

Gentlemen:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

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NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

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We would be most pleased if you would reply by 25 August 1977. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Daniel D. Ludwig

Incl
as stated

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

COMMONWEALTH OF PENNSYLVANIA
GOVERNOR'S OFFICE
OFFICE OF STATE PLANNING AND DEVELOPMENT
BOX 1323
HARRISBURG 17120

September 8, 1977

Colonel Daniel D. Ludwig
Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Re: 77-492-3
U. S. Steel Corporation

Dear Colonel Ludwig:

The Office of State Planning and Development (OSPD) is engaged in several planning projects related to the proposed construction of the new U. S. Steel plant in northwestern Pennsylvania.

First, working with and through the Northwest Pennsylvania Futures Committee and other state agencies, OSPD recently completed a baseline study of the two-county impact area. This study details the existing social, economic and environmental resources in Erie and Crawford Counties. (A copy will be forwarded to you upon publication -- expected in about two weeks.)

The OSPD has also requested financial assistance from the U. S. Department of Housing and Urban Development to undertake an alternative futures study which would assess the extent, magnitude, timing and location of future major state investment requirements under alternative local growth management policies such as dispersed growth, concentrated development, new towns, etc. This work would be carried out in cooperation with the Northwest Pennsylvania Futures Committee and regional, county, and local agencies.

A second important activity of this Office is the formulation of a land policy program for Pennsylvania. Now in its final stage, OSPD has drafted three component strategies which could form the basis for future legislative action. The Urban Growth Strategy (a copy of which is enclosed) suggests the need for a state role in managing the location of key facilities and large scale developments such as the U. S. Steel project. The draft strategy recommends establishment of a county-based systematic

Colonel Daniel D. Ludwig
September 8, 1977
Page Two

impact analysis procedure to evaluate large scale development activities with state involvement reserved for growth decision clearly of statewide significance. The baseline study and alternative futures project, mentioned above, are prototype examples of the shape and scope for such impact analysis by the Commonwealth.

Also enclosed for your information and review are the land policy Technical Papers. This document examines land use issues and problems in Pennsylvania in considerable depth and may be useful to the Corps in preparing the Environmental Impact Statement. The Technical Papers served as input into drafting of the Urban Growth Strategy.

Finally, Pennsylvania's Recreation Plan is also enclosed. This plan inventories the existing recreational resources in the Commonwealth and makes determinations related to future demands. Containing a wealth of information, it may be of value to you in evaluating the U. S. Steel plant impacts.

Should you need further clarification concerning any of these documents or ongoing projects, feel free to contact either myself or Robert Benko, Chief of OSPD's Natural Resources Planning Division.

Sincerely,

Jack A. Brinkus
Director

Enclosures

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U. S. Steel Corporation

16 August 1977

Mr. Robert Buckett, Chairman
Ashtabula County Council of Governments
P.O. Box 368
Ashtabula, OH 44004

Dear Mr. Buckett:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

In order to fully assess the relationship between the proposed project and the plans of other agencies, we would appreciate knowing whether or not the subject project will conform or conflict with the objectives and specific terms of existing or proposed land use plans, policies, and controls, if any, that your agency may have reviewed or formulated for the project area. An evaluation of master plans, zoning regulations, plans developed in response to the Clean Air Act and the Federal Water Pollution Control Act Amendments of 1972, or other related land use proposals of your agency, would be helpful in this respect.

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

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We would be most pleased if you would reply by 25 August 1977. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Mr. Eber L. Wright, Executive Director
Ashtabula County Planning Commission
16 South Chestnut Street
Jefferson, OH 44047

Dear Mr. Wright:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for ± 2,600 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

In order to fully assess the relationship between the proposed project and the plans of other agencies, we would appreciate knowing whether or not the subject project will conform or conflict with the objectives and specific terms of existing or proposed land use plans, policies, and controls, if any, that your agency may have reviewed or formulated for the project area. An evaluation of master plans, zoning regulations, plans developed in response to the Clean Air Act and the Federal Water Pollution Control Act Amendments of 1972, or other related land use proposals of your agency, would be helpful in this respect.

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

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We would be most pleased if you would reply by 25 August 1977. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

SHPA

Enclosed
Enc.

COUNTY OF ASHTABULA
County Planning Commission
Executive Director: Eber L. Wright
ASHTABULA COUNTY OFFICE BUILDING, JEFFERSON, OHIO 44047
Telephone 576-2040 - Ext. 223

August 29, 1977

Daniel D. Ludwig
Colonel, Corps of Engineers
District Engineer
1776 Niagara St.,
Buffalo, New York 14207

Dear Colonel Ludwig:

I am in receipt of the Public Notice regarding application by the United States Steel Corporation, 600 Grant St., Pittsburgh, Penna., concerning application for permits from the Dept. of the Army, Corps of Engineers. Said permits include constructing a cooling water pipeline and intake structure in Lake Erie, and also other permits as listed in the letter containing public notice dated March 11, 1977 (No. 77-492-3).

The Ashtabula County Planning Commission has just completed a report on Land Use which includes three (3) base maps which are as follows:

1. Community Facilities Generalized Location
2. Existing Generalized Land Use 1977
3. General Development Plan Land Use Year 2000

The Development Plan Land Use Year 2000 was developed prior to the U.S.Steel announcement and conveys the consideration that this land has always maintained a high potential for industrial use for a number of reasons:

1. Proximity to Port Conneaut for trans-shipment and receiving of goods and service via water
2. Its location in relationship to main line railroad
3. Its location to major highway U.S.20 and I.S.90
4. Size of land holding provides for planned unit industrial development
5. Prevailing winds are favorable to industrial development N.E. of Conneaut residential population center
6. The distance relationship from coal fields and iron ore fields make this general area a natural to provide for a manufacturing base that has many energy saving features, internally and externally, and is important from the National, as well as the local picture.

The General Development Plan does not include specific land uses within municipalities unless such land use has major impact on employment and regional traffic patterns.

The request for permits as listed at this time seem to be in keeping with the County's overall land use plans. Enclosed are land use policy statements adopted by the Ashtabula County Planning Commission which gives directions and concerns for not only industrial land use but includes Residential, Commercial, Rural and Agr. Land and Natural Resources and Recreation.

One key policy statement concerns industrial which is important to the U.S.Steel project, "If the County is to provide jobs, it must also have suitable sites to attract new industry and in which also existing industry can expand."

Sincerely,
Eber L. Wright
Executive Director

LAND USE POLICY STATEMENT— FEBRUARY 1976

OBJECTIVES FOR A LAND USE GUIDANCE SYSTEM

1. To keep the public decision-making process at the lowest level of government consistent with effective land use regulation.

2. To provide an open process which permits participation by all the interested parties, and to provide clear, well-established procedures for public involvement.

3. To accommodate the expected change (increase or decline) in land use in an orderly fashion.

4. To provide for cooperative arrangements among governments for purposes of responding to mutual land use problems.

5. To provide for a cooperative effort in state and local activities for a mutually re-enforcing process which places major implementation responsibilities at the local level while providing State support for local functions. (Such as Lake Shore Erosion Problems)

COURSE OF ACTION FOR IMPROVING THE EXISTING LAND USE PLANNING PROCESS

1. The communities' land use plans should be approved by the local elected officials prior to the adoption of regulatory measures. This plan should be updated at least once every five years.

2. Elected or appointed officials sitting on planning and zoning committees for purposes of administering land use regulations, should receive training and educational materials as well as attend seminars designed to increase their understanding and capability to participate meaningfully in the land use planning and regulation process.

3. Local communities and counties should be encouraged to rely more heavily upon planned unit development, and other innovative approaches for the purpose of guiding large scale development.

4. A State Land Use and Natural Resource Policy, Planning and Coordinating Commission should be created.

POLICY STATEMENTS TO BE GIVEN FOR THE PUBLIC HEARING IN NESTOR ON FEB. 19th, 1976

LAND USE POLICY STATEMENTS

RESIDENTIAL

The county's basic residential goal is to develop and maintain housing and residential neighborhoods which will enhance the living environment of all the citizens of the county.* This goal can be achieved by fulfilling the following residential objectives which have been established:

a. By encouraging enough housing that is safe, healthy, and in blight-free neighborhoods for existing and future area residents.

b. By encouraging a broad choice of housing types to meet the needs of all socio-economic groups in the county.

c. By recommending the planning of residential neighborhoods with convenient access to employment, shopping and community facilities.

d. By promoting programs to eliminate substandard housing units.

e. By maintaining existing and new habitable housing through educational programs and the administration of functional housing and building codes.

f. By discouraging residential development from locating in flood plains and where soil problem areas occur.

g. By encouraging innovation in neighborhood development which will result in an improved living environment; i.e. neighborhood parks, recreation and open space.

h. By proceeding with gradual renewal and rejuvenation of the livability of older residential neighborhoods.

* See Housing Goals in Housing Study 1977
Antelope County Planning Commission

LAND USE POLICY STATEMENTS

COMMERCIAL

The basic commercial goal is to encourage commercial activity in an orderly, compact, and efficient manner. This basic commercial goal can be implemented by achieving some of the following objectives:

a. By providing for an adequate supply and variety of goods and service outlets.

b. By providing for more effective use and development of the old established commercial centers.

c. By redeveloping and revitalizing the existing Central Business Districts in order to maintain a viable urban core and community identity. Maximum use of private capital and initiative.

d. By discouraging, where possible, strip commercial uses along major arterials.

e. By encouraging rehabilitation of multi-purpose neighborhood commercial centers, which contain adequate off street parking facilities and uncongested access and egress, and are strategically located to serve existing and proposed residential neighborhoods.

f. By encouraging a higher standard of design and appeal for commercial centers to improve their marketability as well as the overall community appearance.

g. By coordinating transportation improvements with the expansion of existing commercial centers and with the development of new centers which will tend to be an energy saving technique by encouraging mass transit or sharing transportation expenses.

LAND USE POLICY STATEMENTS

INDUSTRIAL

If the county is to provide jobs, it must also have suitable sites to attract new industry and in which existing industry can expand. Therefore, the major industrial goal is to stimulate and encourage continued and future economic growth and development which is compatible within the various land uses in the county in the following ways:

a. To provide an adequate supply of available industrial land to meet the present and future industrial employment needs of Ashtabula County.

b. To plan for a variety of zoning for various industrial types with available land suited to specific industrial needs.

c. To encourage industrial rehabilitation which would minimize industrial blight and the blighting effects of industries upon adjacent land usages and vice-versa.

d. To encourage compatible industrial developments with other land uses.

e. To discourage scattered non-conforming industrial use sites.

f. To strengthen the viability of existing industrial districts to retain their industries and enable them to expand at their present site.

g. To encourage future industrial sites with good accessibility to public utility and transportation systems.

h. To promote the development of planned industrial park type complexes which will ensure sound development supported by adequate public facilities and services.

i. To diversify the industrial base to maintain a stable county economy.

j. To encourage environmental impact reviews that have practical relationships to solving problems.

LAND USE POLICY STATEMENTS

RURAL AGRICULTURAL LAND--NATURAL RESOURCES AND RECREATION

The time to plan for future open space, agricultural land, and recreation needs is while the land can still be reserved. The county's agricultural land and open space and recreational goal is to strengthen and maintain the rural economic base, rural beauty, identity, and aesthetic qualities of the county. Agricultural land, open space, and recreation can serve several valuable purposes in this county if the following objectives are considered:

a. To conserve and maintain the agricultural land use base.

b. To develop additional open space and recreational facilities where possible.

c. To protect flood plains, swamps, and steep slopes from unnatural development.

d. To preserve the historical heritage of the county.

e. To protect unique natural areas from urban development, particularly, where they have been identified by the Department of Natural Resources or other professional organizations.

f. To coordinate the development of parks and open spaces with residential subdivision development.

g. To discourage premature, scattered development into agricultural areas.

h. To encourage the return of existing natural resource extraction areas as close as possible to their original state in order that more efficient use of the land may be made in the future.

i. To preserve the quality of the county's potable water sources by improved regulation of land use development adjacent to existing and future bodies of water and critical underground water recharge areas.

LAND USE POLICY STATEMENTS

RURAL AGRICULTURAL LAND--NATURAL RESOURCES AND RECREATION (con't)

Note: The land use policy statements were reviewed and developed with consideration, coordination with the land use policy statements and goals of the areas regional planning organization which is the Eastgate Development and Transportation Agency.

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Erie Metropolitan Planning Commission
606 W. Second Street
Erie, PA 16507

Gentlemen:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

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Applicant: U.S. Steel Corporation

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We would be most pleased if you would reply by 25 August 1977. If additional information is needed, please contact Mr. Paul Leuchner of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Daniel D. Ludwig

Incl
as stated

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Mr. W. A. McCool, Executive Director
Ashtabula Metropolitan Housing Authority
3528 Lake Avenue
Ashtabula, OH 44004

Dear Mr. McCool:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

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Applicant: U.S. Steel Corporation

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Sincerely yours,

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

1 February 1978

Mr. Eric Chiarizio
Zoning Officer of Springfield Township
East Springfield, PA 16411

Dear Mr. Chiarizio:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lakefront tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

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NCBCO-S Re: 77-492-3
Mr. Eric Chiarizio

jr/2322

We would be most pleased if you would reply by 10 February 1978. If additional information is needed, please contact Mr. Paul Leuchner, of my staff. He can be reached by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Incl
as stated

DANIEL D. LUDWIG, P.E.
Colonel, Corps of Engineers
District Engineer

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S Re: 77-492-3
Applicant: U.S. Steel Corporation

16 August 1977

Mr. James E. Walters, Chairman
Conneaut Planning Commission
City Hall
294 Main Street
Conneaut, OH 44030

Dear Mr. Walters:

We are currently preparing a draft environmental impact statement on a permit application by the United States Steel Corporation to construct a process water intake and discharge system in Lake Erie; modify and extend the existing east channel entrance pier and install a raw materials conveyor system in Conneaut Harbor; relocate Turkey Creek and place fill in former creek channels; excavate a diversion channel for the purpose of intercepting surface water runoff and water from Lake Erie tributaries; and to dredge the area adjacent to the proposed extended pier in Conneaut Harbor. The work proposed is ancillary to the establishment of a large new source steel manufacturing complex which is planned for a 2,800 acre lake front tract of land between Conneaut, Ohio and West Springfield, Pennsylvania.

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Sincerely yours,

Daniel D. Ludwig

DANIEL D. LUDWIG
Colonel, Corps of Engineers
District Engineer

Incl
as stated

The City of Conneaut

PAUL WILLIAMS
MAYOR

City Hall Building
Conneaut, Ohio 44030

DIRECTOR OF PUBLIC SERVICE

DIRECTOR OF PUBLIC SAFETY
Eldridge D. Smith, Jr.

August 31, 1977

Colonel Daniel D. Ludwig
District Engineer
Department of the Army
1776 Niagara Street
Buffalo, New York - 14207

NCBCO-S Re: 77-492-3
Applicant: U. S. Steel Corporation

Dear Colonel Ludwig:

We wish to acknowledge receipt of your letter dated August 16, 1977, with regard to preparing a draft environmental impact statement on a permit application by the United States Steel Corporation.

We are enclosing a copy of our Zoning Map and Ordinance which should give you the necessary information to conform to our land use rules. Also, a Facilities Plan as called for in PL-92-500 is in the process of being completed, and a copy will be forwarded to your office as soon as it is completed which should be within the next two (2) weeks.

Trusting this will meet with your approval, we remain

Very truly yours,

THE CITY OF CONNEAUT

Paul Williams
Mayor

PW:mja

Enclosures - 2

Effluent Limitations and

Plume Modeling

AUG 5 1977

Mr. Steven Curtis
Vice President-Engineering
United States Steel Corporation
600 Grant Street
Pittsburgh, Pennsylvania 15230

Dear Mr. Curtis:

You have asked the United States Environmental Protection Agency (U.S. EPA) to provide information for the purpose of assisting United States Steel Corporation in the preparation of an environmental assessment for the contemplated steel works at Conneaut, Ohio. The attachment to this letter sets forth effluent limitations which, on the basis of information at hand, appear appropriate for this facility. The limitations set forth include both promulgated guideline limitations, and limitations developed by applying best engineering judgment, in light of currently available information for processes covered by remanded and proposed guidelines.

In providing you with this information, the U.S. EPA does not agree or represent that these are the limitations which will be applied to the proposed facility, and does not waive its rights to insist upon additional limitations at the time of permit issuance. On the contrary, this information is provided with the following caveats:

1. These are limitations which the U.S. EPA would approve if proposed by the State of Ohio and if consistent with available information and the public participation process.

2. Should additional New Source Performance Standards be proposed prior to commencement of construction of the facility, and thereafter promulgated pursuant to Section 306 of the Federal Water Pollution Control Act, as amended, such standards will be binding upon the facility.

3. Should the water quality standards of the States of Ohio and Pennsylvania require more stringent limitations, such limitations will be applied to the facility.

4. We call your attention to Paragraph 10 of a Settlement Agreement entered into by the U.S. EPA and others, and approved in a Consent Decree in NRDC v. Train, 8 ERC 2120 (D.D.C. June 9, 1976). Pursuant to that Paragraph, there may be issued National Pollutant Discharge Elimination System permits which include language allowing for modification to include limitations promulgated in accordance with the Settlement Agreement.

Should you have any questions concerning this matter, please contact Mr. Don Wallgren at 312/353-2300.

Sincerely yours,

George R. Alexander, Jr.
Regional Administrator

Attachment

cc: Mr. J.A. Jernigan, Project Manager
United States Steel Corporation, w/Attachment

Mr. Stanley V. Margolin
Arthur D. Little Incorporated, w/Attachment

Mr. Martin Margolis, Special Assistant
to the Governor, w/Attachment

Mr. Ned E. Williams, Director
Ohio Environmental Protection
Agency, w/Attachment

Mr. Nicholas Demenedictis
Federal Regional Council
Liason Officer, w/Attachment

Mr. Paul G. Leuchner
U.S. Army Corps of Engineers, w/Attachment

Mr. David A. Allardyce
Fish & Wildlife Service, U.S.D.I., w/Attachment

-3-

cc: Mr. Robert B. Schaffer
Effluent Guidelines Division (WH-552), w/Attachment

Mr. Leonard A. Miller
Permits Division (EN-336), w/Attachment

Mr. J. Brian Molloy
Enforcement Division (EN-338), w/Attachment

Mr. Barry L. Malter
Office of General Counsel (A-131), w/Attachment

Process Water Effluent Limitations
USSC - Contemplated Lake Front Steel Works
Conneaut, Ohio

Process - Coke By - Product
(English Units) Pounds per ton of Product

Parameter	Daily Average	Daily Maximum
Suspended Solids	0.0208	0.0624
Oil & Grease	0.0084	0.0252
Ammonia	0.0084	0.0252
Cyanide - A	0.0002	0.0006
Phenol	0.0004	0.0012
Sulfide	0.0002	0.0006
pH	Within the range of 6.0 to 9.0	
Process - Sintering		
Suspended Solids	0.0208	0.0624
Oil & Grease	0.0083	0.0249
Sulfide	0.0003	0.0009
Fluoride	0.0166	0.0498
pH	Within the range of 6.0 to 9.0	
Process Blast Furnace (Iron)		
Suspended Solids	0.026	0.078
Ammonia	0.0104	0.0798
Cyanide - A	0.00026	0.0008
Phenol	0.00052	0.0016
Sulfide	0.00032	0.0010
Fluoride	0.0208	0.0624
pH	Within the range of 6.0 to 9.0	

Process - Steelmaking		
Parameter	Daily Average	Daily Maximum
Suspended Solids	0.0104	0.0312
Fluoride	0.0084	0.0252
pH	Within the range of 6.0 to 9.0	
Process - Continuous Casting		
Suspended Solids	0.0104	0.0312
Oil & Grease	0.0104	0.0312
pH	Within the range of 6.0 to 9.0	
Process - Scarfing		
Suspended Solids	0.0004	0.0012
Oil & Grease	0.0004	0.0012
pH	Within the range of 6.0 to 9.0	
Process - Hot Rolling - Strip		
Suspended Solids	0.0115	0.0345
Oil & Grease	0.0115	0.0345
pH	Within the range of 6.0 to 9.0	
Process - Hot Rolling - Plate		
Suspended Solids	0.0125	0.0375
Oil & Grease	0.0125	0.0375
pH	Within the range of 6.0 to 9.0	

U.S. EPA - Region V
J. E. McDermott
(312) 353-2110

Arthur D Little, Inc. ACORN PARK · CAMBRIDGE MA 02140 · (617) 864-5770 · TELEX 921436

January 3, 1979

Dr. John Paul
U.S. EPA, Region III
Large Lakes Research Station
9311 Groh Road
Grosse Ile, MI 48138

Dear Dr. Paul:

During the last two months we have communicated two or three times by telephone regarding the water quality modeling studies that were performed for the proposed U.S. Steel Conneaut Plant. In this letter, I will attempt to summarize your questions and my responses. I hope that this letter will present a fair presentation of our discussions; and that I haven't overlooked any important issues. If I have, don't hesitate to call or write.

You had expressed two major concerns: first that the illustrations (Figure 4-89 through 4-109 in the ADL report; Figure 4-77 through 4-97 of Draft EIS) indicated an instantaneous spread of the buoyant wastewater plume over hundreds of meters in the cross-flow direction; a situation which is not consistent with the characteristics of the PLUME/LAKEPLUME models.

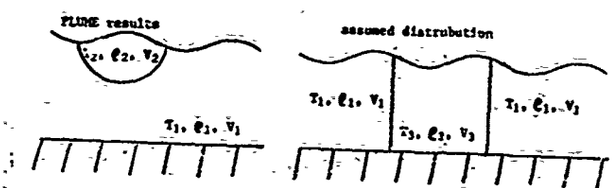
The second significant concern which you expressed was that the coupling of PLUME, a near-field buoyant jet model, with LAKEPLUME, a fair-field passive dispersion model, was not adequately described in the Draft EIS. In response to this query, I mailed you copies of relevant portions of the ADL Report on the Environmental Impacts of U.S. Steel Corporations Proposed Lakefront Plant, but this material still left several questions unanswered.

As regards the first issue - the appearance of the graphical output - my response is that the graphs are intended to be a gross (low resolution) illustration of the approximate shape of the plume under varying circumstances and are not useful for a detailed, high resolution analysis. The scale of resolution within which these graphs are reliable is roughly 100 meters.

Indeed, the quantitative output of PLUME/LAKEPLUME did not exhibit an instantaneous spread of wastewater as is seen, for example, in Figure 4-102 of the ADL report. The apparent instantaneous spread is an artifact of the graphical contouring subroutine which processed the digital output of PLUME/LAKEPLUME. This digital output did not explicitely contain zero values of temperature increment at x = longshore distance from outfall = 0, y = cross-flow distance ≠ 0, which is an implicit assumption of the model. Had these boundary values been specifically input to the graphical display routine, the contours would have converged, as appropriate, to the outfall location. I have gone back to the input of the contouring subroutine to check this diagnosis of the problem, and found that values of temperature increment at x = 0 were not transmitted to that subroutine. This was an oversight on our part. The contouring subroutine is so designed that it interpolates/extrapolates at locations where there is no data input, on the basis of trends in values near that point. The contouring subroutine apparently extrapolated non-zero temperature increments at the x origin (left hand boundary of the graphs), in lieu of specific input to the contrary. PLUME/LAKEPLUME did not predict such a pattern.

Other inconsistent [illegible] as the "horns" observed 400 m downstream of the [illegible] Figure 4-96 of the ADL report, and the non-zero increments at greater than 2500 m offshore, and 2000 m downstream in the same picture, also result from the interpolating algorithms of the contouring routines, not from PLUME/LAKEPLUME.

The coupling between PLUME and LAKEPLUME was achieved by two different semi-empirical models depending on the buoyancy of the plume when PLUME quit. Three conditions are possible: neutral, and positively or negatively buoyant. In practice, the plume was never perfectly neutral with respect to the ambient water, so the plume was either positively or negatively buoyant. The negatively buoyan plumes occurred during the winter. PLUME predicted the jet would reach the surface, then provided no further output. There is considerable excess momentum associated with the jet, inconsistent with the assumptions of LAKEPLUME. In this regime, it was assumed that the negative buoyancy was "fixed" by an overturn of the column of water under the plume with complete mixing so the resultant temperature increment of the column was just the average over the column. This is illustrated on the following page:



where τ_1, $\tau_2 < 4°C$, $\tau_2 > \tau_1$, $\ell_2 > \ell_1$, $v_2 >> v_1$, $\ell_3 \approx \ell_1$, flow is into the page.

The resultant jet is assumed to have the dynamical characteristics of a 2-dimensional jet, which is exactly true only for infinite depth; and assumed to spread, entrain fluid, and slow down according to the theory of a 2-dimensional jet as delineated by Tennekes & Lumley, 1972*. This theory is presumed to apply until the jet shear scale $\frac{U_j - U_a}{x}$ — where U_j and U_a are the jet and ambient current speeds respectively, x is the semi-width of the plume — is less than .002 sec^{-1}. This cutoff value is arbitrary, but based on two considerations:

- an ambient shear scale is $\approx .0002\ sec^{-1}$, one order of magnitude less. Obviously, as the jet shear approaches ambient, the jet is inconsequential and ambient turbulence (LAKEPLUME) takes over.
- the excess speed of the jet over ambient was always less than 20 cm/sec for the cases tested.

Throughout this procedure the flux of momentum and heat, through vertical planes perpendicular to the flow, are conserved.

When the plume is buoyant, a different mid-field model was used to couple PLUME and LAKEPLUME. This was the analytical model presented by Baumgartner, et. al. (1970) based on work by Cederwall (1968), and Larsen & Sorensen (1967). I have not seen these latter two publications.

*H. Tennekes and J.L. Lumley. 1972. A First Course in Turbulence. MIT Press, Cambridge, MA. 300 pages.

January 3, 1979

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Dr. John Paul
Large Lakes Research Station

This model describes the surface spread of a buoyant plume as a result of its buoyancy alone. The model assumes no mixing during this buoyant spread, and consequently is judged to be a conservative means of coupling PLUME and LAKEPLUME because no additional dilution occurs as a result of the coupling procedure. The major drawback of the model is that it neglects the excess momentum of the plume resulting from the high velocity discharge. This excess momentum would lead to a slower spread in the cross-flow direction than would be computed by the model. The result of this analysis procedure is a broad surface lens of slightly buoyant water, through which heat is advected away from the outfall at the same rate as it is being added at the outfall. In this coupling procedure, heat flux across vertical planes perpendicular to the flow is conserved, in contract to the negatively buoyant 2-dimensional jet where both heat and momentum flux were conserved.

These coupling procedures are admittedly simple and inexact. However, it is my position that they did not lead to gross errors in the modeling results, particularly to the extent that they were used by our impact assessment team in arriving at substantive conclusions regarding impacts. For example, with the exception of NH_3 and H_2S, levels of contaminants reported to cause acute or chronic adverse effects on indigenous biota were predicted only very near the outfall — well within the range of validity of PLUME; dilution values at the 800 ft. "mixing zone" reference point were only 10% higher than PLUME output dilution values -- indicating that PLUME was the dominant factor in reported "mixing zone" dilutions; and finally the ADL assertion that downstream drinking water intakes would not be significantly impacted was made with such a large margin of confidence that a significant difference in the coupling procedure would not have altered that conclusion.

The other questions you raised do not require lengthy answers. The vertical diffusivity, K_z ranged from 1 to 30 cm^2/sec, but in most cases was less than 10 cm^2/sec. The horizontal grid size fluctuated widely for maximum computational efficiency, and varied from 15 m to 800 m, but was typically 50-250 m. The main constraint was that the cross plume profile is well defined, i.e., there were a minimum 3-5 grid points across the plume.

January 3, 1979

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Dr. John Paul
Large Lakes Research Station

The port diameter was .5 m; there were 3 ports for 45 K gpm cases, 12 ports for 205 K gpm cases. The flow at the port is horizontal at 4.8 m/sec. The ports are situated near the bottom.

I hope this letter satisfactorily responds to your comments and questions, and if I can be of further assistance to you please call or write.

Very truly yours,

William A. Tucker

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

FEB 1 [illegible]

Colonel Daniel D. Ludwig
District Engineer
Buffalo District
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

EPA's comments on the U.S. Steel Conneaut Draft EIS reflected a need for additional information in order to adequately review the lake modeling portion of that report. Since that time we have received enough information from A. D. Little (U.S. Steel's consultant) to complete our review. Therefore, I offer the following comments on the modeling portion of the DEIS.

The results indicated in the Draft EIS for "typical" conditions are acceptable for assessment of water quality of Lake Erie resulting from the proposed facility. However, the "worst case" conditions (zero lake flow) were never adequately modeled. That is, the simulations presented were for a small lake flow. There is a problem with the LAKEPLUME model when zero lake flows are used, and this may be the reason why this scenario was never actually simulated. Some specific problems are as follows:

1. Some of the isotherm plots (such as Figures 4-77, 4-82, 4-84) have unusual looking contours. Mr. Tucker, of A.D. Little, said that some of these were due to an artifact of the plotting software used, while others he could not explain.

2. Some of the isotherm plots indicate possible numerical errors in the solution. For example, in Figure 4-82, the surface centerline temperatures decrease, then increase, then decrease.

3. The LAKEPLUME model becomes invalid for low lake currents because the alongshore diffusion was neglected with respect to the alongshore current transport in the equations for the model.

4. The isotherm plots for the low and high flow situations indicate drastic differences in conditions at the upstream boundary near the outfall. The conditions at the point where the EPA PLUME model terminates

should be the same for both flows since that model ignores lake currents. These conditions are then used as a starting point for the LAKEPLUME model.

To remedy this situation we recommend the use of two reports (EPA-R2-72-005a and EPA-R2-72-005b) by M.A. Shirazi and L.R. Davis of the Corvallis EPA lab to simulate the "worst case" conditions. Since results can be obtained through the use of nomograms in these reports I do not envision an overwhelming amount of work in utilizing this acceptable methodology.

The simulation results reported in the Draft EIS were made assuming a specific discharge configuration, i.e., a specified diameter, number, and spacing of the ports. The results are dependent on these parameters and changes in the discharge configuration could affect the effluent concentrations in the lake. The discharge configuration used in the simulation was chosen by the consultant to U.S. Steel; if a different configuration is to be used by the company, then the simulations should be rerun.

The results obtained for "typical conditions" have shown violations of existing water quality standards as a result of the proposed discharge. These violations can only increase when acceptable "worst case" simulation results are obtained. It must be noted in the EIS that a discharge permit cannot be issued to a facility where violations in water quality standards will result. Therefore, the proposed effluent limitations and/or discharge port design must be altered in order to achieve existing water quality standards.

If you have any questions relative to these comments, please refer them to Bob Koroncai, of the Technical Assistance and Special Programs Section, at 215-597-3427.

Sincerely yours,

for Nicholas A. Benedictis, Director
Office of Intergovernmental Relations
and Public Awareness

Prime and Unique Farmlands

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S

13 June 1978

Mr. Glenn Loomis
Office of the Secretary
U.S. Department of Agriculture
Washington, DC 20250

Dear Mr. Loomis:

This letter concerns a proposal by the United States Steel Corporation to construct an iron and steel manufacturing complex near Conneaut, Ohio. A public notice, which covers this proposal, along with revised drawings and a copy of the summary of the 3,500-page draft Environmental Impact Statement, are enclosed for your information (Inclosures 1, 2, and 3).

The proposed project site occupies some 5,500 acres of land owned by U.S. Steel and its subsidiaries, the Bessemer and Lake Erie Railroad and the Pittsburgh and Conneaut Dock Company. About one-third of the area is within the limits of the City of Conneaut, Ohio, with the remainder in Springfield Township, Pennsylvania. The character of the site is essentially rural/agricultural, with the exception of about 550 acres in the northwest portion presently in industrial use (or being prepared for use) by the B&LE Railroad and the P&C Dock Company for raw materials storage. Only 76 acres (less than 1 percent) of the site were cultivated in 1977. Most of the remainder is in various successional stages following the cessation of cultivation 5-20 years ago. Agricultural land is the predominant land use classification in the region surrounding the site, comprising about 88.0 percent of the total regional acreage (Erie and Crawford Counties, PA and Ashtabula County, Ohio).

On 30 August 1976 guidelines were issued by the Council on Environmental Quality requiring Federal agencies to assess the impact of their actions on prime and unique farmlands. Prime farmlands are defined as those that are valuable in terms of soil and water conditions. Unique farmlands are those that are valuable from the standpoint of speciality crop production. A copy of this guidance is attached to this letter (Inclosure 4).

NCBCO-S
Mr. Glenn Loomis

In view of this requirement, I request your assistance in determining whether or not prime or unique farmlands are located within or adjacent to the Conneaut-West Springfield site. When making this determination, please indicate the effect the proposed action will have on these resources.

If you have any questions regarding this request, please contact Mr. Paul Leuchner of my staff by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

DANIEL D. LUDWIG, P.E.
Colonel, Corps of Engineers
District Engineer

Incls
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S

13 June 1978

Mr. Graham T. Munkittrick
Federal Building & Courthouse
P.O. Box 985 Federal Square Station
Harrisburg, PA 17108

Dear Mr. Munkittrick:

This letter concerns a proposal by the United States Steel Corporation to construct an iron and steel manufacturing complex near Conneaut, Ohio. A public notice, which covers this proposal, along with revised drawings and a copy of the summary of the 3,500-page draft Environmental Impact Statement, are enclosed for your information (Inclosures 1, 2, and 3).

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NCBCO-S
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Sincerely yours,

DANIEL D. LUDWIG, P.E.
Colonel, Corps of Engineers
District Engineer

Incls
as stated

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207

NCBCO-S

13 June 1978

Mr. Robert E. Quillian
311 Old Federal Building
3rd and State Streets
Columbus, OH 43215

Dear Mr. Quillian:

This letter concerns a proposal by the United States Steel Corporation to construct an iron and steel manufacturing complex near Conneaut, Ohio. A public notice, which covers this proposal, along with revised drawings and a copy of the summary of the 3,500-page draft Environmental Impact Statement, are enclosed for your information (Inclosures 1, 2, and 3).

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On 30 August 1976 guidelines were issued by the Council on Environmental Quality requiring federal agencies to assess the impact of their actions on prime and unique farmlands. Prime farmlands are defined as those that are valuable in terms of soil and water conditions. Unique farmlands are those that are valuable from the standpoint of speciality crop production. A copy of this guidance is attached to this letter (Inclosure 4).

NCBCO-S
Mr. Robert E. Quillian

In view of this requirement, I request your assistance in determining whether or not prime or unique farmlands are located within or adjacent to the Conneaut-West Springfield site. When making this determination, please indicate the effect the proposed action will have on these resources.

If you have any questions regarding this request, please contact Mr. Paul Leuchner of my staff by calling A/C 716, 876-5454, extension 2321.

Sincerely yours,

Incls
as stated

DANIEL D. LUDWIG, P.E.
Colonel, Corps of Engineers
District Engineer

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE Room 522, Federal Building
200 North High Street, Columbus, Ohio 43215

July 18, 1978

Colonel Daniel D. Ludwig, P.E.
Corps of Engineers
Department of the Army
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This is in response to your request for information concerning prime and unique farmland in an area proposed for the construction of an iron and steel manufacturing complex near Conneaut, Ashtabula County, Ohio. The information provided in this letter applies only to the Ohio portion of the construction site.

Important farmland maps showing the location of prime and unique farmland in Ashtabula County have not yet been published. However, detailed soils maps for this county were published in 1975. From the soils data, aerial photos, and observations made during an onsite check, our field personnel headquartered in Jefferson, Ohio, provided the following information.

An estimated seventy percent of the construction site is classified as prime farmland. An aerial photo taken 20 years ago does not show any cultivated crops being grown in the area.

We are not aware of any unique farmlands in the project area. If we can be of further assistance, please let us know.

Sincerely,

Robert E. Quillian, Acting
Robert E. Quillian
State Conservationist

Laboratory for Computer Graphics and Spatial Analysis
Graduate School of Design □ Harvard University

Brian J. L. Berry
Director
Allan H. Schmidt
Exec. Director
Joe Sinclair
Assoc. Director

March 15, 1978

Colonel Daniel D. Ludwig
Department of the Army
Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

In Re: Summary Evaluation of the U.S. Steel Corporation's Draft Environmental Assessment of the Proposed Lakefront Plant at Conneaut, Ohio, under the provisions of Contract DACW49-77-C-0235.

Dear Colonel Ludwig,

At the end of August, 1977, I was contacted by Mr. Roderic R. Madore of your staff and invited to bid upon a contract to review a draft of a socio-economic impact evaluation prepared by Arthur D. Little, Inc. (ADL) as part of the U.S. Steel Corporation's (USS) permit request to build the Lakefront Plant at Conneaut, Ohio. I was subsequently awarded this contract, and agreed specifically to perform the following services:

a) Evaluate the socio-economic baseline data used by ADL-USS to project the primary and secondary impacts that the proposed Lakefront Plant is most likely to have on the environment.

b) Assess the accuracy and validity of the working papers used to support assumptions made in the SIMPACT model.

c) Evaluate the input coefficients used in the SIMPACT model, and determine whether the model output is sufficiently accurate

Evaluation of Socio-Economic Baseline

and Impact Analysis

Hall · Quincy Street · Cambridge, Mass. 02138 · Tel: (617) 495-2526 · Telex: 92-1906

to identify and project the primary and secondary developmental impacts which may occur during the construction and operation of the proposed steel mill.

d) Review the pertinent social and economic text that will be incorporated into the various sections of the Corps' EIS.

e) Recommend measures which could be taken to revise, modify, or otherwise improve the modeling techniques or the quality of the baseline data used to develop the socio-economic impact analysis.

Consistent with this contract, during the period from September, 1977 through January, 1978 I read and provided reviews of each of the individual sections of U.S. Steel Corporation's Draft Environmental Report for the proposed steelmaking facility at Conneaut, Ohio as these sections have been received from Arthur D. Little, Inc. I also attended meetings at Arthur D. Little, Inc. in Cambridge, Massachusetts to discuss the ADL SIMPACT model and to discuss my reviews of the USS-ADL rough draft reports. In addition, I inspected the proposed project site in Conneaut, Ohio, and visited the surrounding communities thought most likely to be those affected by the steelmaking facility.

This report is designed to discharge my responsibilities under clauses (a), (b), (c) and (e) of my contract, as outlined above. I begin by considering the scenario that is contained within the assumptions of the ADL-USS Draft Environmental Report. I then set down my conclusions concerning the SIMPACT model, the baseline data, input coefficients, and the nature of the socio-economic outputs. I conclude with cautionary remarks to those local or regional planners

who will be using the model outputs, and I make a variety of recommendations of ways in which they can improve the utility of the results.

1. Scenario Implied by Modelling Assumptions

Every model implies a scenario that is contained within its assumptions. The ADL-USS SIMPACT IV model is no exception. Some of the assumptions are stated explicitly; others are implicit in the many decisions that had to be made to initiate the assessment process and to construct and run an operational model. These implicit assumptions only become apparent when one has an opportunity to reflect upon consistencies and repetitions in the pattern and practice of decision-making that repeat themselves in various sections of the report. Let me begin by focussing upon these implicit pattern-and-practice assumptions and the developmental scenario they reveal before turning to the explicit aspects of the SIMPACT process and design.

a. Geographical Assumptions

At a very early stage in the ADL-USS work, an agreement was made between state officials in Pennsylvania and Ohio, ADL-USS, and the inter-agency technical team, that the socio-economic impacts relevant to the EIS would be restricted to those occurring in a three-county Regional Study Area (Erie and Crawford Cos., Penn., and Ashtabula Co., Ohio), and more specifically in a somewhat smaller Principal Study Area comprising northeastern Ashtabula Co., western Erie Co. and northwestern

Crawford Co. Within the Principal Study Area, discussions with local planning officials led to a conclusion that a high proportion of the social and economic impacts would be confined to nine lakeshore communities stretching from Ashtabula in the west to Millcreek Township in the east. A Local Study Area consisting of Conneaut and Springfield, the communities within which the Lakefront Plant would be located, also was picked out for special attention.

These geographical assumptions have a variety of implications for the nature and magnitude of the environmental impact estimates. A major new steel-producing complex has social and economic repercussions in many parts of the nation even if the new facility is merely incremental (i.e., is a net addition to total output) rather than involving the replacement of older facilities. These repercussions occur directly not only in the region where it is located but also in regions supplying raw materials and regions receiving products from the mill (i.e., via "backward" and "forward" linkages), and indirectly in all the regions affected by these upstream and downstream changes through chains of consequences that begin in the expenditures made by directly-affected employers and employees. Thus, a full nationwide impact analysis would undoubtedly

reveal total effects several times greater than those that ADL-USS reports for the Regional Study Area. The difference between national and local impacts is more marked in the case of the Lakefront Plant than in many other types of developments because of the particular technology proposed by USS, because integrated hot metal transfers are internalized within the planned USS operation, and because a very limited range of end-products is contemplated, all destined for manufacturing facilities located elsewhere in the northeastern manufacturing belt. One should expect critics to be especially concerned about the great discrepancy between their expectations of the aggregate impacts, derived from the effects that will occur nationwide, and the effects reported for the Regional Study Area, which will, because of the proposed technology and the extent of the region defined, be significantly less.

On the other hand, certain of the impacts reported for the region may be greater than will occur in fact because of an attendant geographical assumption, i.e., that all workers in the plant will reside in the predefined region and make all of their housing, retail, and other expenditures there, i.e., that the a priori region is the local labor, housing and retail market. This will most likely not be the case. There will be "leakages" into surrounding areas, which leads to the conclusion that the impacts reported for the predefined geographical study area by ADL-USS may be greater than those that will occur in fact, not less, as the critics will charge.

These difficulties could have been avoided if ADL-USS had first estimated the likely nationwide impacts by performing the appropriate national-level economic analysis, had then analyzed local housing, labor and retail markets to more accurately define the appropriate Regional Study Area rather than accepting a priori state definitions, and had then used sound locational analysis to disaggregate the national impacts on a regional basis and to set control totals for the detailed socio-economic impact analysis within the local region. This was not done. Instead, the ADL-USS regional economic analysis team constructed a separate input-output table for the Regional Study Area. Outputs from this I/C analysis then were carried through the succeeding blocks and modules of the SIMPACT IV model to estimate local impacts. This is not to say that the input-output analysis for the Regional Study Area is unsound; on the contrary, it is competently and properly executed, and produces the quantitatively limited impacts that are to be expected under the circumstances. But it does serve to highlight the point that decisions made very early in an EIS process can have a lasting effect on the conclusions and on the nature and focus of continuing critical debate, because the decisions help create the analytic scenario.

b. Place of Residence Allocations

Other important geographical assumptions were made by ADL-USS either explicitly or through pattern-and-practice, as noted above, and bear highlighting. For example, when new construction- or operations- phase workers were allocated by place of residence to local communities it was assumed that the socio-economic character of these communities will be maintained by a principle of "like going to like." The social character of the lakeside communities was assumed to be preserved; i.e., ADL-USS assumed that they will grow but not change. New developments that change community character or that lead residential development in new directions, for example into the southern sections of the region, are not contemplated. Nor is it assumed that new construction will so speed up new residential development that filtering will take place to accommodate lower-income housing needs, and simultaneously to change the existing social composition of communities.

It may be argued that ADL-USS made the proper assumptions in the short-run -- that significant changes in the character of

local communities takes a much longer time to unfold -- and this is what ADL-USS has done to facilitate the allocation of social and economic impacts to local communities within the study region. But it may be argued with equal validity that there is an alternative growth scenario that remains unexplored in their draft report.

c. Selection of SIMPACT Input Parameters

Conservative geographical allocations are followed by use of conservative parameters in SIMPACT to estimate the secondary effects of new residents on community service needs (the term "conservative" is used here to refer to the pattern of growth without change discussed in the previous section). For example, communities with above-average service endowments are expected to add to these endowments in a strictly proportionate manner as population grows. A community with x policemen per 10,000 population today is thus expected to add to its police force in a manner that will preserve this ratio in the future. The only exception to the rule is that communities with "below-average" endowments (i.e., below some average computed for study-area communities, for the study area as a whole, or for the relevant states) are expected to reduce their "deficiencies" by increasing their service ratios to this present average. Throughout their report, calculation of these averages either needs correction or replacement altogether by authoritative standards.

Frequently, unweighted averages of the individual community service ratios are calculated, ignoring the wide variation in their populations. Properly weighted averages should be substituted. It is here that the most serious errors have been made in SIMPACT input coefficients.

An input parameter selection process of this kind has clear strengths: investigation of existing conditions permits the derivation of a set of numbers that can be used to drive the larger SIMPACT model, numbers that are locally-based and therefore not unreasonable. Simultaneously, the process presents problems: of whether the proportionate expansion assumption is relevant; and whether the "averages" represent appropriate performance standards for poorly-serviced communities. On the other hand, the SIMPACT model does permit alternative parameters to be input, and the environmental consequences of the different scenarios therefore posited to be derived.

d. Absence of a Local Growth Climate

Some may also charge that there is another difficulty that afflicts the implicit ADL-USS assumptions: that no growth will take place that is neither "baseline" (i.e., likely to occur in the absence of the plant) nor directly traceable to the Lakefront Plant via the SIMPACT modelling process. In other words, there is no allowance made for emergence of a local "growth climate" as a result of the plant

-- a growth psychology producing additional growth in what is presently an industrially undeveloped area, except that the arrival of the plant has changed attitudes and perceptions. The emergence of such a growth climate is frequently part of the scenario of state and local economic development officials and of chambers of commerce, and they will be unhappy that ADL-USS assumed it away. I do believe that ADL-USS was correct in this assumption however; the alternative is highly speculative.

e. The Implied Scenario Summarized

The ADL-USS growth scenario is thus one of a specific and restraining technology leading to social and economic impacts within a predefined area that are numerically small and that result in minimal disruptions of the existing character of the region. It is an unstated scenario, but it may be quite reasonably deduced from pattern-and-practice.

It is, of course, possible to postulate quite different scenarios and I am sure that critics will do so, as I have already noted. I would urge local planners to consider a variety of alternative scenarios, and to have them processed through SIMPACT so that a range of possible outcomes can be contemplated and the sensitivity of the ADL-USS results to their assumptions can be more readily understood.

That being said, let me add that I believe ADL-USS to be correct in their numerically small estimates of the direct consequences of the particular technology within the local labor and housing markets. As noted earlier, an analytic rather than an a priori way of defining these markets would have been more convincing, however. The draft report would have been far richer had a range of alternatives been considered and if, for each alternative, in addition, some confidence limits were to have been placed around estimates rather than presenting a single set of numbers and arguing that it is a "worst case." In fact, I can find very little justification for the ADL-USS worst case argument that is documentable rather than asserted, except that all induced and secondary impacts are assumed to take place within the predefined study area, without leakages.

2. The SIMPACT Model

So much for the consequences of the implied scenario. The ADL-USS draft report consists of a description of the proposed plant, a discussion of existing conditions and of "baseline" growth (i.e., that which is expected to occur in the absence of the plant), a presentation of the SIMPACT model and of the input data and coefficients used to predict the plant's primary and secondary impacts, and an analysis of the model's outputs -- predicted physical, biological and socio-economic impacts -- and of possible ameliorative measures.

a. SIMPACT Characterized

The SIMPACT model is an accounting device: nothing more, nothing less. There are other models that are as complex, others that are simpler, and others that are theoretically or mathematically more elegant. SIMPACT converts the annual construction- and operations-phase data supplied by USS into socio-economic and environmental impacts by multiplying the input data by appropriate translating coefficients. The model has a block-and-module structure in which initial direct economic impacts are translated into indirect and induced impacts, and these in turn into infrastructure needs, land use, traffic, energy and environmental impacts and, finally, fiscal consequences (expenditures/revenues).

This kind of accounting scheme has many strengths: it forces consistency in a multi-element impact assessment; it requires that reasonable input parameters and model relationships be formulated to translate the initial USS information about the proposed plant into fully-comprehensive employment, earnings and environmental consequences; it ensures that different elements of the work program are properly and logically interfaced.

b. Weaknesses of Feedback Structure

Yet as with all such modelling efforts, there are limitations too. Most of the modelled relationships form lengthy chains with either relatively weak or undeveloped feedback loops (the exception is where input-output analysis is used within the economic block). For example, the model does not permit predicted changes in the quality of the local environment or in local tax burdens to feed back and influence residential preferences of plant employees or of the secondary workers they support, thus changing the geographical allocations of workers to place of residence, and therefore the changed secondary environmental and tax burden consequences ... etc. Similarly, the traffic changes that are predicted to be the consequence of land use changes do not feed back and change land use ... etc. This weak feedback structure may not be serious in the time-frame of the environmental impact analysis, but it is a limitation of an otherwise complex model that it shares, for example, with the first generation of land use-transportation models that were developed in the late 1950s.

c. Difficulties with Dynamics

Another limitation is that the model is not completely dynamic. Instead, a separate equilibrium solution is derived for each year in the analysis period. For each year, a separate set of construction- and operations-phase inputs is made for the USS facility, these inputs are multiplied to derive the induced and secondary impacts; and these are

combined with baseline forecasts to produce a picture of the demography, economy and environment of the region in that year. The translating multipliers -- the input coefficients -- remain unchanged in most cases through the entire impact analysis period, an expression of the conservative assumption noted earlier: that present cross-section relationships will persist over the projection period.

These difficulties with feedbacks and dynamics are not unique to SIMPACT, of course. They are shared by many early-generation models and are as much attributes of the state-of-the-art as they are problematic features of the ADL-USS effort. SIMPACT does provide an important accounting tool, one whose structure permits alternative inputs to be substituted for those selected by ADL-USS so that the consequences of alternative growth scenarios can be examined. Because the model is available and operational, much greater immediacy and flexibility is available to state and local officials, for example, if they deem it to be desirable to explore possible alternative futures.

3. Baseline Conditions

Whether or not the impacts of the Lakefront Plant produce crises in service needs and governmental revenues/expenditures depends upon the combination of these impacts and the predicted baseline growth expected to occur in the absence of the plant.

a. Assumptions

The dominant baseline assumption is continuation of the trends of the 1960s, i.e., that knowledge of the recent past is the best prediction of the near-future. Much of the baseline growth forecasted hinges upon population projections conducted separately for the Ohio and Pennsylvania portions of the Regional Study Area by local and state officials. While consistent birth- and death-rate assumptions are made for the two sides of the state line, the migration assumptions differ. I found no adequate justification for this idea that migration would be significantly different in passing from one state to the other. Historically, there have been differences, but the question of whether these differences will persist is moot. The population baseline sections are also moot on the nationwide post-1970 changes in migration trends that have become evident. To be sure, data are presented on migration 1960-1970 and 1970-1975, and indeed, these data show dramatic changes and even reversals. But the local and state officials chose not to respond to these changes in the nature of change; rather, their migration assumptions are simple annual averages for the entire 1960-1975 span. This is one example of a natural bureaucratic conservatism that has its expression not only in projected population growth, but also in the entire array of predicted baseline service needs, revenues, expenditures, etc. because of the conservative parameters used by ADL-USS in SIMPACT.

b. Alternatives

It is in this spirit that the ADL-USS baseline is a safe point of departure: the recent past is taken as the safest guide to the immediate future. But alternative sources or supplementary data were missed, most notably the work of the Regional Economics Division of the U.S. Department of Commerce (now the companion agency to the Bureau of the Census in the Social and Economic Statistics Administration), the local area applications of its revised OBERS projections, and the later MULTIREGION modelling of local labor markets completed for that agency and the U.S. Economic Development Administration at the Oak Ridge National Laboratory. Some of the MULTIREGION work is particularly salient, for it addresses the most difficult segments of the ADL-USS regional economic analysis, that of the relationships between jobs, labor force participation, unemployment and migration, and hence, the induced population growth. It is argued with equal validity in the MULTIREGION model that increases in labor force participation and induced migration will be such that unemployment in the Regional Study Area will not decline as precipitously as ADL-USS suggests, but rather that the total employment to

population ratio will remain relatively constant. The implication is that some combination of enhanced labor force participation and induced migration -- and therefore a greater rate of induced population growth than projected by ADL-USS -- is an equally reasonable alternative scenario, all other aspects of the analysis remaining constant.

Another source that might have been consulted is one of the Bureau of the Census' Summary Tape Processing Centers, the National Planning Data Corporation of Ithaca, New York, which maintains the Bureau's small area population and housing estimates, and the related population and housing projections for small areas.

4. Input Coefficients

I did have difficulty with some of the input coefficients reported in some of the working papers. Earlier, I noted the problems with arithmetic, i.e., incorrect computation of averages. There also was a problem of variations in the base for the average used in lieu of an authoritative performance standard: state, regional or local. However, these are trivial problems of a nature that presumably will have been corrected by ADL prior to the release of their final report. The methodology otherwise ranges from excellent (as in the cases, for example, of the regional economic and the education sections) to mundane but adequate (as in the case of the local police and fire services, or the secondary impacts of land use changes on runoff and water quality), and the presentation of impacts mirrors the methodology.

5. Overview

This lengthy recitation of difficulties should not detract from the value of the ADL-USS effort. The draft report is competent, comprehensive, and consistent. Variations in the strengths and weaknesses of the draft are reflective both of the state of the art in environmental impact modelling, the need to make ad hoc decisions early on to get the process rolling, and some inevitable differences in completeness and care in a multi-member team effort. Whereas the SIMPACT model provided a central and consistent accounting tool, different ADL staff groups were responsible for different sets of baseline data, projections, working papers, input coefficients, and impact analyses. Almost inevitably, quality differentials resulted. Meanwhile, time pressures produced inconsistencies due to the complexity of cross-checking and internal communications. This was compounded by the linear nature of the causal chains in SIMPACT, with its relatively weak feedback structure, and the absence of a single strong editorial hand in the preparation of the draft environmental report.

ADL-USS should make every effort to correct the errors I have noted and to improve organization and language so that their final report presents effectively and persuasively the many strengths of their impact analysis. If this is done, the thrust of the impact analysis will be something which the regulatory agencies can live with. I recommend that ADL-USS be absolutely

clear and straightforward about the nature of their scenario. And they should also indicate to local planners some of the alternative assumptions that might be processed through SIMPACT to provide a sense of the range of possible outcomes, and their most sensitive determinants. More may be needed, too, to clarify the issue of locally-restricted impacts when nationwide consequences may be several times larger.

Local planners should be aware of the opportunities that may be provided by SIMPACT to undertake sensitivity analyses of alternative assumptions/scenarios, by running the model with alternative input specifications. Particular attention should be focussed on the population baseline assumptions, on the geographical allocation assumptions -- whether communities will grow but maintain the same character --, and on the assumed service ratios needed to be met as the region grows. There is an excellent point of departure here for creative local planning for alternative futures within the region. I urge responsible officials not to forego this opportunity.

* * * * * * *

This summary report is necessarily brief. If any of the issues I have raised require elaboration, do not hesitate to ask me to provide an expansion.

Sincerely,

Brian J. L. Berry
Williams Professor of
City and Regional Planning

BJLB:jk

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA PENNSYLVANIA 19106

NOV 30 1978

Colonel Daniel D. Ludwig
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

On September 13, 1978, this office wrote you stating that the U.S. Steel Corporation and their consultant, Arthur D. Little, Inc., had agreed to perform an air quality modeling assessment of the combined impacts of the proposed U.S. Steel's Conneaut and General Public Utility Service Corporation's (GPUSC) COHO #1 facilities upon the allowable Prevention of Significant Air Quality Deterioration (PSD) Class Increments. Specifically, the air quality modeling assessment was to include the combined impacts of the Conneaut and COHO #1 facilities upon the allowable PSD sulfur dioxide (SO_2) Class II increments.

During the week of September 15, 1978, this assessment was forwarded to this office by Arthur D. Little. Copies were subsequently made and forwarded to the principal reviewers, as agreed upon earlier and identified in the September 13 letter to you, for their review and comment. Additional information was also provided by Arthur D. Little as requested by the principal reviewers.

This is to inform you that the review of this assessment has been completed and is considered adequate for the Environmental Impact Statement being prepared on the U.S. Steel Conneaut facility. This concurrence does not, however, fulfill all of the requirements of the EPA's June 19, 1978, Prevention of Significant Air Quality Deterioration regulations in order for the U.S. Steel Corporation to receive approval to construct the Conneaut facility pursuant to these regulations.

At such time as the U.S. Steel Corporation applies for approval to construct the Conneaut facility under the PSD regulations, more extensive analysis may be required for both total suspended particulate (TSP) and SO_2 impacts of all existing sources and new sources which either consume or expand the PSD TSP and SO_2 impacts of air quality Class increments. This has been conveyed to the U.S. Steel Corporation in discussions concerning the Conneaut/COHO #1 air quality assessment. It has been recommended to U.S. Steel that they contact the EPA Region V Office in Chicago to ascertain what additional requirements may be necessary in order to obtain approval to construct the Conneaut facility. Region V is the appropriate PSD reviewing office for the Conneaut facility.

Please do not hesitate to contact me or Mr. Glenn Hanson of this office if you have any questions regarding this matter.

Sincerely,

Nicholas DeBenedictis, Director
Office of Intergovernmental Relations
and Public Awareness

cc: Glenn Hanson, EPA Region III
J. A. Jernigan, U.S. Steel Corporation
Paul Leuchner, U.S. Corps of Engineers

APPENDIX "C"

Water Quality Modeling for Lakefront Plant

Water Quality Modeling for Lakefront Plant

Introduction

The lake dispersion modeling program is one of three important components for estimation of the effects of the main industrial wastewater outfall on the water quality of Lake Erie. These three components are as follows determination of baseline conditions in Lake Erie near the potential outfall location, estimation of constituent concentrations in the wastewater from the proposed plant, and computer modeling of the dispersion of the outfall plume in the lake under a variety of lake dispersion conditions.

Throughout the course of this investigation the applicant has attempted to characterize both "typical" conditions and hypothetical "worst case" conditions. The estimated "worst case" conditions are hypothetical in the sense that they represent the simultaneous occurrence of a number of disadvantageous events (for example, warm, stagnant meterological conditions, negligible lake currents, plant at maximum capacity, high ambient lake contaminant concentrations, wastewater treatment system malfunction). Some of these events are independent of each other, others may be correlated. Since observational programs are not designed to record all these phenomena simultaneously, there is no evidence that these events have ever occurred simultaneously or that they will in the future, so the "worst case" characterization should represent an extreme upper bound on constituent concentrations. The "worst" and "typical" dilution conditions were determined by performing sixteen case studies at potential outfall locations. Four different seasonal periods in the lake were studied: February, early June, late August, and October. Within each, four cases were studied: stagnant lake conditions coupled with expected effluent temperature and typical air temperature during that season, stagnant lake coupled with effluent temperature expected for a very warm day for that season; and brisk lake currents (30-45 cm/sec) for typical and warm air temperatures. Out of these cases, the two with the lowest dilution were selected to represent worst dilution potential, and two cases whose dilution factors are representative of the median of the 16 cases were selected to represent typical conditions.

The U. S. Environmental Protection Agency has reviewed and analyze the effluent diffusion and lake modeling sections of the Draft EIS and concluded that the results indicated for "typical" conditions are acceptable for assessment of water quality of Lake Erie resulting from the proposed facility. However, the "worst case" conditions (zero lake flow) are not adequately predicted by the LAKEPLUME Model. The specific problems associated with the model are outlined in a 15 February 1979 letter from USEPA, which letter is appended to this Final Impact Statement. The USEPA states that results for "typical" conditions have shown violations of existing water quality standards as a result of the proposed discharge and these violations can only increase under "worst case" conditions. A discharge permit cannot be issued to a facility where violations of water quality standards will result, therefore, the proposed effluent limitations and/or discharge port design must be altered to achieve existing water quality standards. To assist in this matter, the USEPA recommends the use of two reports (EPA-R2-72-005a and EPA-R2-72-005b) by M. A. Shirazi and L. R. Davis to simulate "worst case" conditions. The results can be obtained through the use of nomograms in these reports. Additionally, should the applicant use a different discharge configuration (i.e. specified diameter, number, and spacing of ports, etc.) from that used in the original modeling, the simulations should be rerun. Alternatives in effluent limitations and/or discharge port design along with adequate simulations of "worst case" conditions are matters to be resolved through the NPDES permit review. The U. S. Steel Corporation must submit a permit application to the Ohio EPA, which is responsible for administering the NPDES permit program. The Ohio EPA has lead role, subject to USEPA overview, in the drafting and issuance of NPDES permits and has the regulatory authority to require any additional information needed to complete its review of the application. If any additional information is requested but not provided, the Ohio EPA may deny the permit.

The Physical Environment

The physical environment in the vicinity of the discharge is discussed briefly below. The plant effluent will likely be discharged horizontally from a submerged diffuser on the lake bottom at some distance offshore.

The exact location is to be determined during detailed engineering based on, among other things, the aquatic sampling survey.

The proposed site is located along the southern shore of Lake Erie near the eastern boundary of the central basin. The shore is quite straight from Ashtabula to Presque Isle and trends WSW/ENE. The only significant obstructions or embayments along this stretch of shore are the man-made harbors of Ashtabula and Conneaut. The lake bottom slopes gently along this shore, and in the vicinity of the proposed discharge, the slope is 1:200. Depth contours run parallel to shore from Conneaut Harbor to Walnut Creek (approximately 25 kilometers) where a broad shoal is found west of Presque Isle. For the most part though, there is a uniform depth profile all along the shore.

Lake Erie currents are predominantly wind-driven and, because of its shallow depth, the effect of the wind can be felt even at the bottom.

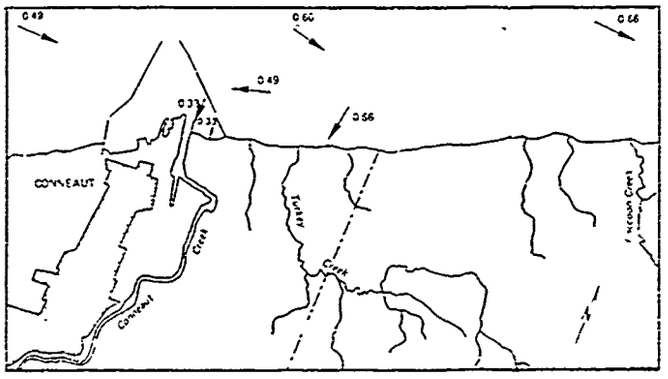
The prevailing wind direction is west-southwest, with southerly winds not infrequent. The prevailing wind direction, the orientation of the lake's major axis, and the Coriolis force interact to produce prevailing surface currents roughly east-southeast over much of the central basin, which in turn results in a prevailing east-northeast current along the southern shore. This current is reinforced not only by the prevailing winds, but also by the presence and trend of the shore which forces the water entering the near-shore area to turn to east-northeast. While the offshore waters of the central basin exhibit a return flow at depth in opposition to the surface water, the near-south shore waters on average flow uniformly to the east-northeast. The actual currents in the lake at any given time are generally quite different from the prevailing or long-term average currents. Recorded observations of currents in the vicinity of the proposed Lakefront plant indicate easterly longshore flow in 42 percent of known observations. Westerly longshore flow is observed next in frequency. 25 percent of known observations. Current speeds are typically 10-15 cm/sec.

In the vicinity of the plant site, current patterns are significantly altered near the breakwalls. The predominant current is west-southwest to east-northeast and the breakwalls are an impediment to this flow.

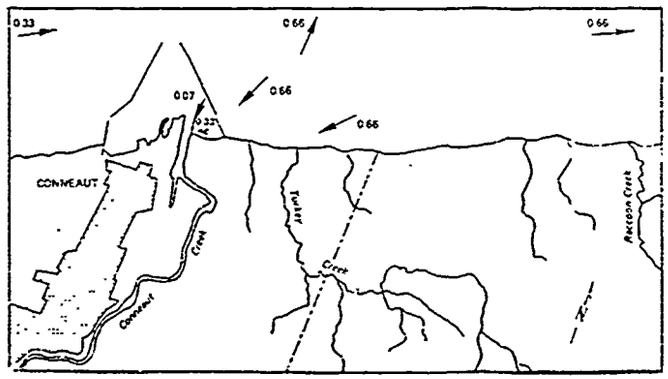
In the lee of the breakwall (east of it under the predominant flow, is a relatively stagnant area where a semi-permanent eddy might trap some of the discharged material for several days. Current observations by Aquatic Ecology Associates show this eddy quite clearly. Their observations are reproduced in Appendix Figure AP-1. The environmental impact of the discharged wastewater would be reduced if the outfall were sited clear of this eddy. However, its exact dimensions, which will fluctuate with wind and current conditions, cannot be observed or predicted accurately. It is likely that the eddy has dimensions roughly similar to the obstacle, and thus will extend roughly 0.6 mile east of the breakwall and the same distance from shore. Further evidence of the scale of this eddy is provided by the disturbance of the depth contours in the vicinity of the breakwall. The anomalous contours, indicative of rapid sediment deposition, are shown in Appendix Figure AP-2.

An important feature of the shallow near-shore zone on the southshore is that, at depths less than 30 feet, it is rarely thermally stratified. Thermal stratification of these shallow waters will likely only occur during late May and early June. After mid-June the thermocline depth is greater than 30 feet and the near-shore zone is wholly within the Lake Erie epilimnion. In the winter (January through March) the near-shore area is likely to be ice-covered and this cover may extend over the whole lake.

SURFACE



BOTTOM



SURFACE AND BOTTOM WATER CURRENT PATTERNS IN LAKE ERIE AND THE MOUTH OF CONNEAUT CREEK(July 7, 1977)
(ND = no direction)

Appendix Figure AP-1

One final physical consraint on the location of the main discharge is that the intake/discharge configuration should minimize the potential for recirculation of effluent to the intake pipe. The potential for recirculation will be reduced in the waters offshore of the proposed plant if the discharge is situated east of the intake structure.

Location and Design of Discharges

Location of Main Discharge

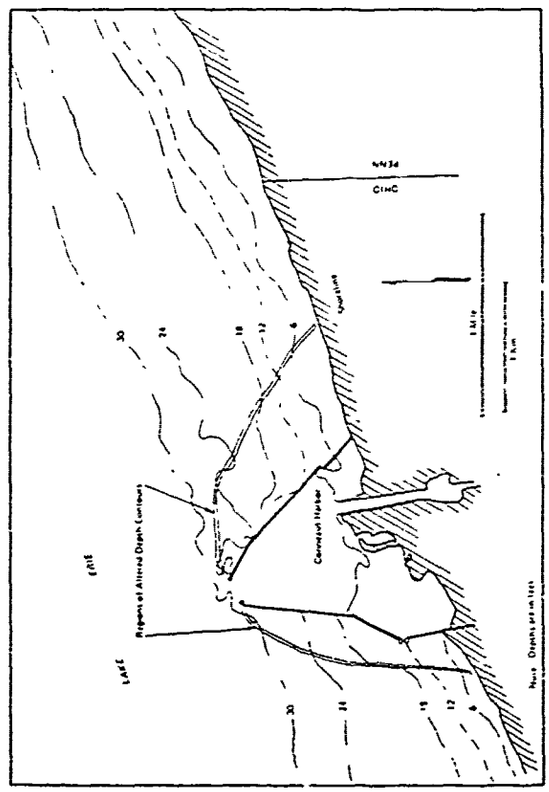
Treated industrial wastewaters and waste heat will be discharged directly into Lake Erie from a single submerged outfall. The applicant designed and located the discharge structure based on the physical factors mentioned above and the mathematical models which are discussed later in this appendix.

The precise outfall location will be reevaluated after completion of the aquatic sampling program and lake dispersion modeling studies. The goal of these investigations is to determine an environmentally acceptable site. The water quality factors which will influence this choice are outlined here.

From an engineering standpoint, the most important physical condition affecting the environmental impact of one location vs. another is the capability for rapid dilution of the effluent as it enters the lake. The ideal condition for rapid dilution occurs when the effluent is discharged in deep water, far from shore, i.e., far from any boundaries which restrict dilution. Dilution is also enhanced by vigorous currents in the lake. Excluding Conneaut Harbor and areas within about 2,280 feet of the breakwalls there is no evidence that any region of the lake near the proposed site has more vigorous currents than any other region. However, the coastal zone, extending roughly 1.8 to 3 miles from shore, is commonly believed to experience stronger and more persistent currents than the central basin area further offshore.

In the past, heated water has frequently been discharged at the surface, sometimes with the express intent of enhancing the release of heat to the atmosphere. However, it has been shown that the initial reduction of plume temperature is accomplished predominantly by dilution, not loss of heat to the atmosphere, so a submerged outfall, which enhances dilution, is recommended rather than a surface discharge.

Modeling studies of the dilution in Lake Erie of the wastewater expected from the proposed plant have shown that a discharge at 1.09 miles offshore in depths of 33 feet will result in the increased dilution and reduced offshore chemical concentrations compared to a



LAKE BOTTOM CONTOURS NEAR PROJECT SITE

Appendix Figure AP-2

discharge located at 0.43 miles offshore in depths of 20 feet. However, the mixing zone dilutions at the 33-foot depth are only moderately greater than those of the 20-foot depth. Mixing zone as used here for discussion purposes is a circle of 800-foot radius whose center is the plant outfall. The mixing zone dilution is the dilution at the edge of this circle. Actual mixing zone dimensions are not prescribed.

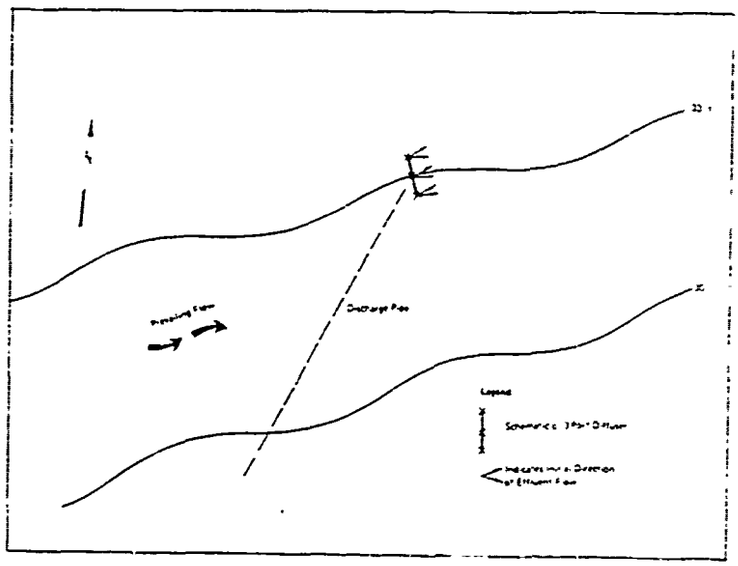
Design of Main Discharge

The water effluent discharge of the proposed plant would be a submerged multiport diffuser located on the bottom of Lake Erie in a depth of water of about 30 feet. The effluent would flow (horizontally) from several circular ports, parallel to depth contours and to the prevailing currents in an ENE direction. This configuration is shown on Appendix Figure AP-3. The exit velocity would be 15-16 feet per second. This design affords rapid dilution of waste heat and other pollutants because of the mixing induced by the high velocity of the discharged effluent. Submerged multiport diffusers have been successfully used for the discharge of treated sewage in a marine setting and waste heat from power plants on the Great Lakes.

The ports would be aligned along an axis perpendicular to shore, and would be separated by no less than 33 feet. This separation, the prevailing current, and the direction of the effluent flow act so as to prevent interference between the plumes, which might lead to reduced dilution. During those periods of currents, counter or perpendicular to the prevailing flow, the diffuser design would probably lead to slightly less mixing zone dilution than during conditions of prevailing flow.

Intent of the Modeling Program

The water quality modeling program was used to estimate the expected effluent-induced changes in critical water quality parameters. Estimates are required of: the area of the lake which will experience increased levels of various constituents, concentrations of constituents expected within high use zones, e.g., public beaches, spawning grounds, drinking water intakes, and shoreline areas, and the characterization of worst expected situations including their probable frequency and duration. Under proposed revisions to Ohio Water Quality Regulations, expected to be in effect by 1978, mixing zone size is not specifically defined, and thus it is not possible to state unequivocally the conditions at the edge of the mixing zone or make any conclusions regarding compliance with Ohio Water Quality Standards.



SCHEMATIC DIAGRAM OF SUBMERGED LAKE OUTFALL

Appendix Figure AP-3

The latter two constraints do not affect this analysis since the Froude number, for several hypothetical cases tested, has ranged from 800 to 7,500, and current speeds are an order of magnitude less than the discharge velocity. The constraint on port diameter can be circumvented by increasing the number of ports. Of course, a multiport diffuser is a very attractive configuration which has been adopted by several power plants, and so it is not difficult to satisfy the constraint that the port diameter be less than 1/10 of the port depth.

The inability of outfall PLUME to describe the sinking plume phenomenon is not considered significant for this study since the sinking plume is seldom observed under actual operating conditions. The fact that the temperature of maximum density of fresh water is at 4°C, not the freezing point, implies that when water warmer than 4°C is mixed with water colder, the mixing zone between these two water masses will contain water denser than either, which would subsequently sink. However, the density changes so slowly with temperature near 4°C that the negative buoyancy of 4° water relative to 0° water is very slight

$(g\frac{\Delta\rho}{\rho} \approx .001 \frac{m^2}{sec^3})$ when compared with, e.g., the negative

buoyancy of 15°C water vs. 19°C water $(g\frac{\Delta\rho}{\rho} \approx .007 \frac{m^2}{sec^3})$.

Furthermore, this mixing occurs while the plume is still a high velocity jet; the energetic turbulence generated in the jet should negate the slight tendency for sinking of 4° water. In one example tested to date, this finding is confirmed in the fact that outfall PLUME predicts mixing of effluent to a maximum temperature 3.2°C while the PLUME velocity is still approximately 0.6 m/sec. The slight negative buoyancy generated by mixing to 4°C would have little or no influence on the dynamics of the plume under these circumstances.

The first limitation listed above is the most constraining for this analysis since the model predicts dilution only to 20-70 meters away from the source, which is not adequate for consideration of concentrations at the edge of potential mixing zones 120 meters or more from the outfall. Concentration isopleths to several kilometers from the source are also needed for the evaluation of impact at the shoreline, potential potable water intakes, and mouths of tributary streams. Thus, it has been necessary to develop a complementary model to predict far-field effects. That complementary model is called LAKEPLUME consisting of two forms which are LPLUM3 and LPLUM1.CE. The former is for the ice-free lake and the latter is used when the near-shore zone is ice-covered.

The LAKEPLUME model is essentially a far-field model in which the effluent plume is assumed to be a passive contaminant, without excess momentum. Its buoyancy is assumed to be small, i.e. the temperature excess over ambient is less than 5°C. Ambient lake turbulence is presumed to be responsible for all mixing in the lake plume model. This is a conservative assumption since the plume may have some slight residual momentum and turbulence at the PLUME/LAKEPLUME interface, which would enhance its dilution in the lake. This turbulence is neglected LAKEPLUME.

LAKEPLUME assumes a uniform steady current carries the effluent away from the source, while lateral and vertical diffusion provide mixing with the ambient lake water. The lateral diffusion coefficient is dependent on the current speed and the lateral spread of the plume, a concept which is well established through dye diffusion experiments on the Great Lakes and theoretical analyses of turbulent mixing in lakes.

The vertical diffusion coefficient used in LAKEPLUME is dependent on thermal stratification and current speed employing techniques developed by Kullenberg in the North Sea, and verified in Lake Ontario by Kullenberg, et al.

The LAKEPLUME Model assumes steady current conditions and is, thus, valid only after winds have blown from the same direction for roughly 6-12 hours. Fluctuating currents will generally enhance the dispersions of pollutants so this is a conservative approximation.

Verification of the model LAKEPLUME has been investigated by simulation of dispersion observed during dye diffusion experiments in the Great Lakes. These experiments were not a part of this study, but the results have been published in the scientific literature. Very few experiments have been conducted which are relevant to the verification of LAKEPLUME. G. T. Csanady, currently with Woods Hole Oceanographic Institution but then at the University of Waterloo, conducted the only Great Lakes dye diffusion experiments, utilizing a continuous source, which have been reported in the open literature. These experiments were begun in 1961 and reported by Csanady in the Journal of Fluid Mechanics, V. 17, 1963, pp. 360-384, and the Proceedings of the 7th Conf. on Great Lakes Research, 1964, pp. 326-339.

On the basis of the information reported in these publications, LAKEPLUME has been used to simulate the dispersion of dye released continuously from a point source in coastal areas of Lakes Erie and Huron. Ten separate experiments were reported by Csanady in sufficient detail to permit LAKEPLUME simulation. To date only two (low diffusion cases) have been simulated by LAKEPLUME and thus, these

mathematical approximations used force near-shore resolution to be no better than 400 meters, still larger than required for this study.

The aforementioned difficulties in achieving the required spatial resolution are compounded by the fact that the models do not accurately predict current fluctuations or even mean currents at any given location. Allender, et al., 1977 show that model current speeds are roughly one-half the observed speeds, and predicted directions show little correlation with observed directions. If one samples the real lake at any one location, its properties are not likely to be those predicted by the model. The real lake is much more complicated than the model can ever be. Nevertheless, the models are capable of representing the major current gyres and their approximate size and location. However, it is not unusual for the edge of a gyre to be displaced several kilometers in the model from its observed position, even in the "verified" model.

Finite element models allow increased resolution in selected areas, which improves their potential for this type of analysis, but there is no reason to believe that they are significantly more accurate than finite difference models when it comes to the basic representation of physical phenomena.

In light of the difficulties and uncertainties of trying to predict currents via a numerical model, and in view of the stated objectives of this effort, the approach has been as follows: analyze existing data on local currents to determine typical magnitudes, directions, and patterns, incorporating the current studies made specifically for this effort, determine means and extremes of current speed and the distribution of direction; use these observed currents as input to an advection-diffusion model to investigate typical and extreme conditions; and identify the worst expected conditions (short-term), and probable long-term mean conditions.

Thus, the models used assume that the current field is known. That current field is chosen to represent typical and extreme conditions based on observed currents.

Models Used in the Analysis

Two complementary models have been used to estimate the dispersion and dilution of the effluent in the lake water. The applicant proposes to utilize a submerged high-velocity diffuser some distance offshore. The early stage of dilution from such an outfall is controlled primarily by the dynamics of the jet-like plume which supplies additional turbulence for immediate dilution. The action of this diffuser is described adequately by the outfall plume model developed at USEPA's Pacific Northwest Environmental Research Laboratory by D. J. Baumgartner and D. S. Trent. This model is an extension of the similarity theory of Morton (1959) and Abraham (1963) from horizontal plumes to the case of inclined plumes. The model takes into account the turbulence induced by the excess momentum of the effluent and also the buoyancy forces which arise when the effluent density is different from that of the receiving water.

A similarity solution as used in the model is one based on the assumption that velocity and contaminant profiles are geometrically similar all along the plume axis, i.e.,

$$U(r,s) = U_m(s) \exp\left[-K \frac{r^2}{S_u}\right]$$

$$C(r,s) = C_m(s) \exp\left[-K_c \frac{r^2}{S_c}\right]$$

where s is the distance from the port following the centerline, r is the radial coordinate perpendicular to s, K and K_c are assumed to be slowly varying functions of s, U and C are the velocity and concentration for temperature, respectively, and U_m and C_m are the centerline values of U and C.

Once these assumptions are made regarding the form of the velocity and concentration profiles, the solution of the full hydrodynamic equations can be obtained with experimental evidence for K and which are the entrainment coefficients. The solution depends on the densimetric Froude number of the buoyant plume,

$$F = \frac{U}{(g'_o l)^{1/2}}$$

where U is the effluent velocity, g is the buoyancy, and l is a length scale, e.g., the port diameter.

The limitations of the outfall PLUME model are as follows:

- The solution is not valid after the plume reaches the surface or an intermediate level of neutral buoyancy. Consequently the operation of the model is terminated when those conditions arise.
- The model is not capable of describing a sinking plume when the effluent density is greater than the receiving water.
- The port diameter must be less than 1/10 of the port depth below the surface.
- The Froude number must be greater than 10^{-1} and less than 10^{4}
- Ambient current speeds are assumed negligible.

The approach taken for this study has been similar to that taken in the air quality analysis

a. Analyze existing data on local currents to determine typical magnitudes, directions, and patterns.

b. Determine means and extremes of current speed and the distribution of direction.

c. Use these observed currents as input to an advection-diffusion model to investigate typical and extreme conditions.

d. Identifying the worst expected conditions and the probable long-term average conditions.

Thus, the models used assume that the current patterns are known. Those current patterns have been chosen to represent typical and extreme conditions based on observed currents.

Description of Modeling

The Selection of a Numerical Advection-Diffusion Model

One of the major decisions to be made in any modeling program is the choice and development of the model(s) to be used. A model is any simplified representation of the real world water, and accordingly may be a single equation in which mathematical variables represent real quantities in the lake, or it can be a physical scale model of the system in which water or some other fluid follows the same basic laws as the water in the lake. Finally, it may be a computer model which is the most complex extension of the mathematical representation model. The word model has come increasingly to mean a computerized model. Certainly the computerized models, which are the statistical theorems, are more sophisticated and objectively deterministic than other models which are often based more on subjective judgement. It is possible to incorporate more of the relevant physical phenomena, to incorporate complicated boundaries, and to perform computations for a greater variety of potential cases than is possible through analytical mathematical techniques. Moreover, when compared with hydraulic scale models, numerical models have the advantage of much simpler adaptability to new environments. A scale model is valid only for one locale. Construction of scale models is costly and time-consuming. Moreover it is frequently impossible to scale the model to preserve the relative importance of several competing phenomena, e.g. density stratification and horizontal diffusion. This latter defect may also be found in some numerical models which can, for example, simulate the Gulf Stream or the action of wind induced surface waves, but cannot do both at the same time. The applicant has chosen to use computerized models since they are easier to manipulate and less costly than hydraulic models.

The first consideration in selecting the type of model is the nature of the problem - the physical scales of interest and the nature of the environment. Evaluation of impacts is greatly facilitated by estimates of the concentration of numerous chemical constituents, in particular, estimation of the volume of water which is likely to have a concentration greater than X, some specified concentration, commercial or expected uniform high use zones (e.g., public beaches, spawning grounds), and the characterization of worst expected situations including their potential frequency and duration. The other very practical and pertinent consideration is whether the effluent, and the diverse changes that it may cause in the receiving water quality standards to be exceeded. This is relevant to the impact assessment under the assumption that the standards and criteria represent a safe level.

Under the law, the water quality standards must be met outside of a mixing zone centered on the discharge and having a radius defined as required by a case-by-case basis. Consideration of this aspect and the threshold concentrations representing effects levels for a site requires a scale of resolution in the numerical model of roughly 10 meters.

Resolution to 10 meters is difficult to achieve in hydraulic scale models.

Any model which solves the equations of motion (Navier-Stokes) requires an accurate statement of the conditions at the boundary. That statement can be made accurate and realistic if the boundary of the model is also the boundary of the lake. However, to model the currents of the whole lake, a tradeoff of spatial resolution must be made. Computer speed and capacity limits the horizontal resolution of such whole-lake models to roughly one kilometer.

The required resolution could only be achieved by modeling a subsection of the lake, but then the problem of prescribing the conditions at an open boundary occurs. Successful resolution of this problem has been achieved in the special cases of bays (Ellender, 1975; Wang and Connor, 1975) by partially enclosed seas and tidal estuaries but these are cases where observations and mathematical representation of water level and currents are more feasible than the wide open, straight southern shore of Lake Erie, which is not forced by tides. Sheng and Lick (1975) have developed a near-shore dispersion model for the Cleveland area of Lake Erie in which a coarse grid "whole-lake" model is coupled to a fine grid near shore model. However, the

used for changes in temperature in excess of 3°C, implying that the plume has negligible buoyancy, and the excess momentum will not exceed 1m/sec.

Although buoyancy effects are not an inherent par of the model, they can be imposed by choice of appropriate vertical eddy diffusivity and initial plume configuration, a topic discussed further below.

The model solves the three-dimensional advection diffusion equation

$$U \frac{\partial C}{\partial X} = Ky \frac{\partial^2 C}{\partial y^2} + Kz \frac{\partial^2 C}{\partial z^2} - rC$$

where C is the concentration of the parameter of interest in excess over ambient lake water. C can be temperature as well as dissolved gases, or dissolved or suspended solids. For suspended solids, this equation is v f the settling velocity is negligible. X is the longshore coor e, y is the shore perpendicular coordinate and z is the vertica ordinate.

U is the longshore velocity which is assumed to be uniform.
Ky is the horizontal eddy diffusivity.
Kz is vertical eddy diffusivity.
r is a decay rate (first order decay).

Boundary conditions must be met at the shore, bottom, surface, and an open boundary offshore.

The shore is considered a perfect insulator or reflector, $\frac{\partial C}{\partial y} = 0$, concentration is zero at the open offshore boundary which is chosen far enough offshore that the condition is approximately satisfied. The flux of material at the surface and the bottom may be zero or nonzero depending on the constituent considered. For temperature, there is no flux at the bottom (insulated), but the heat loss to the atmosphere is a function of the temperature and meteorological conditions.

When the lake is ice-covered the surface flux condition is replaced by the constraint that the surface temperature remains at zero, implying heat is lost in the melting of ice.

The model assumes that all depth contours are shore parallel but incorporates a variable depth by defining dimensionless depth.

$$\eta = \frac{z}{D(y)}$$

where D ne depth, a function of distance offshore. This representation has been used by Lick.

The equations are cast in finite difference form by central differences in y and z and forward difference in x. Criteria have been developed which must be met for a well-behaved solution. These involve adjustments in the grid spacing as a function of Ky, Kz, U, and r. If these criteria are not met, numerical instability (undamped growth of roundoff errors), or negative concentrations or temperatures may occur.

PLUME/LPLUM Coupling

Outfall PLUME provides the following information as output the plume exit velocity, and Froude number, and the dilution as a function of S(centerline distance), X(longshore) and z(vertical). It indicates whether the plume has reached the surface or been trapped at an intermediate depth.

The approximate plume area is $A_f = A_o (D_o/D)^2$, where D/D$_o$ is the dilution. If the plume is buoyant at the end of PLUME, it is assumed that the plume spreads at the surface, preserving the same maximum temperature and area. During the winter the plume is initially buoyant and rises to the surface. As it ascends, however, it is rapidly cooled by mixing so that when it reaches the surface it is actually negatively buoyant. PLUME terminates execution at this point, as it cannot predict a sinking plume. The inferred temperature distribution at this juncture is unstable and totally unrealistic. It is assumed for input to LPLUME.CE. that the plume convectively mixes through a column of water whose width is the diameter of a circle with area A_f. This is consistent with the assumptions of PLUME and provides a slight additional dilution.

The model as described here is similar to a number which have been proposed for a plume from continuous source. The equations have been solved analytically for certain simplified domains and a point source (see, e.g. Csanady, 1973). The equations must be solved numerically for an arbitrary initial distribution and variable depth as incorporated in the LAKEPLUME model. An important remaining problem is the specification of the diffusion coefficients. The relations employed here represent a synthesis of experimental data and empirical relations from numerous sources in the scientific literature.

The theory of turbulent diffusion is based on dimensional analysis of Kolmogorov (1941) and Obukhov (1941). One of Obukhov's important results is $Ky = C_1 \varepsilon^{1/3} \ell^{4/3}$, where C_1 is a universal constant, ε is the rate of turbulent energy dissipation and ℓ is the length scale of the diffusing contaminant. This theoretical result was predated by the experimental work of Richardson (1926) who postulated $Ky = C\ell^{4/3}$. Most experimental studies since that time have phrased their results in terms of Richardson's formula because of two

important reasons: the great difficulty of measuring ε, and its weak (cube root) influence on K. Diverse observations of ℓ have tended to confirm Richardson's finding, although the power of ℓ is generally found to be somewhat less than 4/3, ranging from 1.1 to 1.3. In the context of Obukhov's formula, their results imply that $\varepsilon \approx$ constant over the range of the experiments.

Experimental determination of the relationship of Ky to ℓ in the Great Lakes have been made by Murthy (1970-1976) and Csanady (1963). Murthy (1976) shows that $Ky = C\ell^{1.26}$ for Lake Ontario. Csanady's findings support Murthy's results and extend them to smaller values of ℓ. One aspect of the result is its implication that the turbulent diffusivity is independent of the current speed. The diffusive power of turbulence is drawn ultimately from the energy of the mean flow. Obukhov's formula provides the relief from this dilemma, if one further adopts another assumption of turbulence similarity theory. (Tennekes and Lumley, 1972).

$$\varepsilon \propto \frac{u'^3}{\ell_o}$$

where u' is the fluctuating component of the velocity, and ℓ_o is the length scale of large energy containing eddies (not the size of the diffusing contaminant). If one further assumes that u' U, and ℓ_o is invariant in the nearshore zone of all the great Lakes, then

$$K = C_1 \varepsilon^{1/3}_{1.26} \ell^{1.26}$$

$$= C_{2u} \ell$$

One may then calculate C_2 from the experiments of Murthy and Csanady assuming that the current speed during Murthy's experiments was about 12 cm/sec. Murthy's experiments indicate $C_2 = 0.02$; while for Csanady's experiments $C_2 = 0.037$. For this study, the applicant adopted a middle large $C2 = 0.03$. Thus,

$$Ky = .03\ U\ell^{1.26}$$

where U $(\frac{m}{sec})$; ℓ (m); Ky $(\frac{m^2}{sec})$. This formulation has the expected property that the difusivity is less under stagnant conditions than during periods of vigorous currents. ℓ is taken, after Murthy, to be the standard deviation of the plume, but with a maximum allowed value of 0.85 (y_c) where Y_c is the distance between the shoreline and the plume centerline.

The representation of the vertical diffusivity, K_z is based on Kullenberg's (1971) formulation,

$$K_z = a \frac{W^2}{N^2} \frac{\partial U}{\partial z}$$

which has gained general acceptance (Murthy and Okubo, 1977). This formula was used by Tucker (1976) in a verified model of lake thermoclines. In this formula, W is the wind speed, and

$$N^2 = \frac{g}{\rho} \frac{\partial \rho}{\partial z}$$

Kullenberg, et al. (1973) found $a = 2 \times 10^8$ in Lake Ontario and that value is adopted for the present study. $\frac{\partial \rho}{\partial z}$ and $\frac{\partial U}{\partial z}$ are estimated by linear approximation i.e.,

$$\frac{\partial \rho}{\partial z} = \frac{\Delta \rho}{\Delta z}$$

$$\frac{\partial}{\partial z} = \frac{\Delta U}{\Delta z}$$

The results of the applicant's modeling and typical isotherms are presented in the Water Quality section of Chapter Four.

APPENDIX "D"

Baseline Data Utilized for Ichthyoplankton Entrainment Analysis and Scope of Work for Additional Studies

Ichthyoplankton

Baseline Data

Baseline Data Used in Ichthyoplankton Entrainment Analysis

This appendix has been added to the EIS to facilitate the review of entrainment estimates for ichthyoplankton which are presented in Chapter Four. The tables in this appendix show the ichthyoplankton densities at each sampling station for the period May through September 1977. The data contained in these tables were used for estimates of entrainment. Specifically, stations LE8 surface bottom samples and LE9 surface and bottom samples were averaged to obtain a general indication of the average monthly densities at the proposed intake area. For example, Tables D-1 and D-2 show the collection of gizzard shad at LE8 and LE9 stations for the month of May. A density of 17 larvae per 1,000 m^3 was found at one of eight sampled locations for an average monthly density of 2.12 larvae/1,000 m^3. This method tends to produce low estimates, and therefore, the highest density for each month was also used to estimate entrainment. Using the computed densities, entrainment was estimated based on the withdrawal of 1.005×10^7 cubic meters of water per month. The major difficulty with the estimates stems from the fact that night and day samples are interspersed throughout the sampling period and although night samples are generally higher, a quantitative analysis could not be made.

The draft EIS stated that due to the anticipated entrainment losses, the location of the intake structure should be subject to further evaluation. Comments on the draft EIS from the USEPA, U. S. Fish and Wildlife Service, National Marine Fisheries Service, Pennsylvan Department of Environmental Resources, Pennsylvania Fish Commission, and Erie County Health Department supported staff's position regarding reevaluation of the intake location. Most of these agencies advised that additional ichthyoplankton sampling should be performed to determine the final location of th ake structure. The USEPA indicated that the U. S. Fish and Wildli. Service would provide expertise in selecting the species, sampling location and period for additional sampling and that the additional data will be reviewed prior to final approval of the intake. Final design and location will be determined at a future date through the NPDES permit program. On 9 January 1979, U. S. Steel agreed to perform the additional sampling as requested by USEPA.

On 18 January 1978, Corps staff met with representatives of the U. S. Fish and Wildlife Service, the Pennsylvania Fish Commission, and the U. S. Steel Corporation to discuss a scope of work for additional ichthyoplankton sampling. Subsequently, U. S. Fish and Wildlife Service developed the scope of work which is presented at the end of this appendix.

Table D-1

Density (No./1,000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, 29 April 1977 (All Samples Taken During the Day.) Volume in Parenthesis Indicate Use of Unmetered Net; Volume Filtered Assumed Equal to Volume Filtered by Metered Net.

Station	LE1		LE2		LE3		LE4		LE5		LE6	LE7	LE8		LE9		LE10		Total	Total
Depth	S	B	S	B	S	B	S	B	S	B	S	S	S	B	S	B	S	B	Surface	Bottom
Volume filtered (m^3)	(168.54)	168.54	65.94	92.93	116.52	96.84	(81.82)	81.82	72.55	(72.55)	132.66	88.44	96.47	(96.47)	(123.31)	123.31	124.86	(124.86)	1,070.11	857.32
Species																				
Larvae																				
White Sucker	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	1	0

Density (No./1,000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, 10 and 13 May 1977. (All Samples Taken During the Day.) Surface Net Not Metered; Volume Filtered Assumed Equal to Volume Filtered by Bottom Net.

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9		LE10	
Depth	S	B	S	B	S	B	S	B	*S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	(41.10)	41.10	(47.31)	47.31	(59.81)	59.81	(48.89)	48.89	(61.91)	61.91	(60.20)	60.20	59.88	59.8	(56.78)	56.78	(57.36)	57.36	(56.15)	56.15
Species																				
Larvae																				
Kainblow smelt	0	0	0	21	0	0	0	41	0	16	0	17	0	0	53	53	0	0	0	18
Unidentified darter	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	21	0	17	0	41	0	16	0	17	0	0	53	53	0	0	0	18

* = Identification and enumeration incomplete.

Table B-2

Density (No./1000 m^3) of Ichthyoplankton Taken in Two-Half Meter Net Collections in Lake Erie on 23 May 1972. (All Samples Taken During the Daylight.)

	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9		LE10				
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	Total Surface	Total Bottom	Total
Volume filtered (m^3)	59.78	66.64	71.48	61.77	80.65	78.09	63.77	64.20	59.97	65.52	65.00	67.73	68.78	70.84	67.94	59.34	58.72	57.10	73.74	72.45	669.53	671	1340.91
Species																							
Eggs																							
Unidentified	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*
Total	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*
Larvae																							
Clupeid shad	0	0	14	0	37	25	0	0	0	0	0	0	0	0	0	17	0	0	0	0	6	4	5
Rainbow smelt	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	0	13	7
Yellow perch	0	0	14	0	0	13	0	0	17	61	0	15	0	0	0	0	0	0	0	0	3	9	6
Logperch	0	0	0	15	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	4	2
Unidentifiable	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	*
Total	0	60	28	15	37	38	16	0	17	92	0	15	0	0	0	17	0	0	0	69	10	30	20

* = Density less than 1.

Table D-3
Density (No./1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, on 2, 3, and 4 June 1977. (D = Day, N = Night)

Station	LE1		LE2				LE3				LE4		LE5				LE6	
Time	D	D	D		N		D		N		D	D	D		N		D	D
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	64.46	69.95	46.89	60.27	56.82	61.51	44.57	63.94	68.44	73.49	58.91	69.08	61.64	63.66	71.60	75.09	62.31	69.37
Species																		
Eggs																		
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0
Unidentifiable	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	13	0	0
Larvae																		
Gizzard shad	0	0	21	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	615	0	66	18	65	67	63	58	109	0	14	0	0	0	13	0	0
Unidentified minnow	0	0	0	66	158	65	112	63	44	150	0	0	0	0	0	13	0	0
Trout-perch	0	0	0	0	0	33	0	0	0	0	0	0	0	0	0	27	0	0
Unidentified darter	0	0	0	0	18	0	0	0	0	0	0	0	0	0	14	0	0	0
Yellow perch	0	0	0	0	123	163	22	172	73	381	0	14	0	16	30	53	0	0
Logperch	0	200	21	315	211	146	0	78	58	54	0	0	-	0	14	0	0	0
Unidentified sculpin	0	0	0	17	18	130	0	16	88	41	0	0	0	0	56	53	0	0
Unidentifiable	0	0	0	0	0	33	0	0	0	14	0	0	0	0	0	0	0	0
Total	0	815	42	481	546	635	201	391	321	748	0	29	0	16	112	160	0	0
Juveniles																		
Unidentified sculpin	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table D-3 (Continued)

Station	LE7				LE8		LE9				LE10		Day		Night		
Time	D		N		D	D	D		N		D	D					
Depth	S	B	S	B	S	B	S	B	S	B	D	D	Total Surface	Total Bottom	Total Surface	Total Bottom	Total
Volume filtered (m^3)	58.29	59.98	62.46	63.62	61.76	66.90	55.70	66.22	56.39	63.50	63.94	73.94	578.47	663.31	315.71	337.21	1894.70
Species																	
Eggs																	
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	1
Larvae																	
Gizzard shad	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	1
Rainbow smelt	0	17	32	94	0	30	0	0	18	94	0	0	5	23	25	74	27
Unidentified minnow	0	0	0	0	0	0	0	0	0	0	0	0	9	12	38	47	22
Trout-perch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	2
Unidentified darter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1
Yellow perch	0	0	0	0	0	15	0	45	18	0	0	14	2	27	48	125	48
Logperch	0	17	0	15	0	0	0	0	0	0	0	0	2	39	54	42	31
Unidentified sculpin	0	0	64	0	0	0	0	0	0	0	0	0	0	3	48	44	17
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2
Total	0	33	96	110	0	45	0	45	35	94	0	14	19	106	219	353	142
Juveniles																	
Unidentified sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	*
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	*

*Density less than 1.

Table D-4

Density (No./1,000 m^3) of Ichthyoplankton Taken in Over-Half Water Net Collections in Lake Erie, Cuyahoga, Ohio, on 8 and 9 June 1977. (All Samples Taken in the Day.)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9		LE10		Total	Total	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	Surface	Bottom	Total
Volume filtered (m^3)	51.72	64.74	62.60	65.71	60.60	72.34	64.43	77.67	64.95	71.22	71.73	80.96	53.89	67.87	59.80	79.10	54.10	79.36	55.76	63.78	606.58	721.95	1,328.51
Species																							
Larvae																							
Rainbow smelt	0	108	0	0	0	0	16	13	0	0	0	0	0	15	0	13	0	0	0	16	2	15	9
Unidentified minnow	0	0	0	0	15	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Yellow perch	0	0	64	46	15	14	0	0	15	0	0	34	0	0	0	0	0	0	0	16	16	11	11
Logperch	0	2	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1
Total	0	108	64	46	44	42	16	13	15	0	0	34	0	15	0	13	0	0	0	31	15	29	23

Table D-5

Density (No./1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, on 13,14, and 15 June 1977. (D = Day, N = Night)

Station	LE1 D S	LE1 D B	LE2 D S	LE2 D B	LE2 N S	LE2 N B	LE3 D S	LE3 D B	LE3 N S	LE3 N B	LE4 D S	LE4 D B	LE5 D S	LE5 D B	LE5 N S	LE5 N B	LE6 D S	LE6 D B
Volume filtered (m^3)	54.80	72.01	58.16	59.7	43.26	57.92	55.88	58.68	69.98	73.24	52.18	62.75	58.58	67.20	57.43	58.81	50.04	57.84
Species																		
Eggs																		
Unidentifiable	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0
Larvae																		
Rainbow smelt	0	0	0	0	0	0	0	0	0	0	0	0	0	15	17	17	0	17
Unidentified minnow	0	0	0	0	0	0	0	0	0	137	0	0	0	134	279	187	0	17
Trout-perch	0	0	0	0	0	17	0	0	0	14	0	0	0	0	17	17	0	0
Unidentified darter	0	0	0	0	0	0	0	0	0	0	0	0	0	30	87	0	0	0
Yellow perch	0	0	0	0	0	69	0	0	0	205	19	0	0	0	0	17	0	0
Logperch	0	0	0	33	0	17	0	17	0	27	0	0	0	60	0	17	0	0
Freshwater drum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0
Unidentifiable sculpin	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	33	0	121	0	17	0	382	19	0	0	238	418	255	0	36
Juveniles																		
Unidentified sculpin	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0

Table D-5 (continued)

Station	LE7 D S	LE7 D B	LE7 N S	LE7 N B	LE8 D S	LE8 D B	LE9 D S	LE9 D B	LE9 N S	LE9 N B	LE10 D S	LE10 D B	Day Total Surface	Day Total Bottom	Night Total Surface	Night Total Bottom	Total
Volume filtered (m^3)	48.10	58.93	55.07	55.32	53.71	65.52	50.81	59.39	52.98	70.28	58.53	72.48	540.70	634.57	278.72	315.57	1769.65
Species																	
Eggs																	
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*
Larvae																	
Rainbow smelt	0	17	54	0	0	0	0	0	19	0	0	0	0	5	18	3	5
Unidentified minnow	0	0	18	18	0	0	0	0	0	0	0	0	0	16	61	70	28
Trout-perch	0	0	18	0	0	0	0	0	0	0	0	0	0	0	7	10	3
Unidentified darter	0	0	9	72	0	0	0	0	0	0	0	0	0	3	36	13	9
Yellow perch	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	63	12
Logperch	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	13	6
Freshwater drum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	*
Unidentifiable sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	*
Total	0	17	182	90	0	0	0	0	19	0	0	0	2	35	126	174	64
Juveniles																	
Unidentified sculpin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1

Table D-6

Density (No./1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, on 20, 22, and 23 June 1977 (All Collections made during the Day)

Station -	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9		LE10		Total	Total	
Volume	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	Surface	Bottom	Total
filtered (m^3)	66.20	78.42	55.86	57.59	57.45	64.33	63.21	74.12	62.76	65.00	54.85	61.75	59.00	65.53	58.43	71.46	38.64	58.13	61.39	67.53	577.59	663.83	1241.62
Species:																							
Eggs																							
Freshwater drum	45	89	18	0	0	0	411	0	2677	215	2826	178	1136	76	941	84	26	0	244	59	850	71	433
Unidentifiable	0	77	0	0	0	0	0	0	96	62	0	0	0	31	120	0	0	0	0	74	22	26	24
Total	45	166	18	0	0	0	411	0	2772	277	2826	178	1136	107	1061	84	26	0	244	133	872	96	457
Larvae																							
Gizzard shad	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Unidentified minnow	0	13	72	156	122	0	0	0	366	31	602	16	0	0	17	0	0	0	0	0	118	20	65
Trout-perch	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Yellow perch	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Log perch	0	26	0	451	0	0	0	0	0	200	0	32	0	0	0	126	0	0	0	0	0	78	42
Freshwater drum	0	0	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	3	2
	0	38	90	625	139	0	0	0	366	262	602	49	0	0	17	126	0	0	0	0	121	102	111

Table D-7
Density (No./1000 m^3) of Ichthyoplankton Collected in One-Half Meter Net Collections
in Lake Erie, Conneaut, Ohio, on 29 June 1977. (All samples taken at night.)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9		LE10 - LE15 Not Sampled		Total Surface	Total Bottom	Total
	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B			
Volume filtered (m^3)	X	X	63.78	62.22	54.04	61.45	41.71	39.70	37.04	47.70	45.75	46.28	43.82	46.16	47.84	50.36	40.58	44.80			374.53	398.78	773.36
Species																							
Eggs																							
Unidentified minnow			0	16	0	0	0	0	0	0	0	0	0	0	146	7	7	0			19	3	10
Freshwater drum			141	64	130	162	288	0	1322	839	590	173	776	108	1066	79	835	223			345	293	393
Unidentified			0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	16	5
Unidentifiable			0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0			3	0	1
Total			141	144	130	162	288	0	1322	839	590	173	776	108	1233	79	838	223			917	316	409
Larvae																							
Gizzard shad			94	498	111	65	24	25	0	84	66	65	23	184	84	79	49	0			61	130	97
Rainbow smelt			0	0	56	211	456	4912	243	42	1246	2982	456	4636	188	1291	74	3862			324	2006	1190
Carp			157	129	204	0	623	25	459	943	153	22	46	22	105	59	74	67			216	153	184
Unidentified minnow			26983	20467	463	146	240	50	540	189	219	22	137	0	146	99	0	67			4820	3293	4057
Trout-perch			0	64	19	0	120	50	0	168	0	259	23	43	21	0	0	22			21	73	48
Rock bass			314	0	93	16	0	0	0	0	0	0	0	0	0	0	0	0			67	3	34
Unidentified sunfish			0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0			3	0	1
Smallmouth bass			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	3	1
Rainbow darter			0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0			3	3	3
Greenside darter			0	0	0	0	0	0	0	0	0	0	0	22	0	0	25	0			0	3	1
Unidentified darter			0	0	19	0	0	75	27	0	175	22	0	0	0	0	0	112			27	28	27
Yellow perch			78	64	19	0	0	0	0	0	0	0	0	0	0	0	0	0			16	16	16
Logperch			251	48	37	32	48	125	0	21	0	670	0	22	0	79	0	45			53	129	84
Freshwater drum			16	0	37	65	0	0	0	0	0	0	0	0	0	0	0	290			8	45	27
Unidentifiable			0	64	0	0	0	0	0	0	0	22	0	0	0	0	0	0			0	15	8
Total			27493	21536	1077	535	1487	5238	1269	1447	1859	4108	685	4853	544	1649	222	4443			5595	5865	5745
Juveniles																							
Trout-perch			0	16	0	0	0	0	0	0	0	0	0	0	0	20	0	22			0	4	4
Unidentified sculpin			0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	13	6
Total			0	96	0	0	0	0	0	0	0	0	0	0	0	20	0	22			0	26	10

Table D-8

Density (No./1,000 m^3) of Ichthyoplankton Taken in Coe-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, on 5, 6, 7, and 8 July 1977. (D = Day, N = Night)

Station	LE1		LE2				LE3		LE4		LE5				LE6		LE7	
Time	N		D		N		N		N		D		N		N		N	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	56.70	54.25	52.08	52.28	50.02	54.73	54.97	62.10	61.32	56.83	52.85	59.16	55.72	61.47	37.38	16.92	44.35	46.93
Species																		
Eggs																		
Freshwater drum	0	0	0	0	20	0	1364	161	16	18	0	0	36	16	0	0	0	0
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	20	0	1364	161	16	18	0	0	36	16	0	0	0	0
Larvae																		
Gizzard shad	0	18	115	0	5393	4477	327	322	49	317	0	17	90	667	0	0	0	85
Rainbow smelt	0	55	0	0	20	0	0	0	0	35	0	0	0	260	0	0	22	43
Carp	71	0	0	30	1000	347	691	225	2544	422	114	17	0	0	0	0	0	0
Unidentified minnow	441	74	384	134	12135	51690	2874	6246	930	458	6036	879	2692	1025	3130	476	1240	107
Channel catfish	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0
Trout-perch	0	0	0	0	0	256	0	16	0	0	0	0	0	260	0	0	0	0
Unidentified sunfish	0	0	0	0	20	0	18	16	0	18	0	0	0	0	0	0	0	0
Unidentified darter	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0
Logperch	0	0	0	19	1279	1023	18	193	0	35	0	17	0	716	0	159	0	0
Freshwater drum	0	0	0	19	0	37	55	32	16	0	0	0	0	0	27	0	0	0
Unidentifiable	0	0	0	0	0	0	18	0	0	0	0	0	0	0	27	0	0	0
Total	511	147	500	210	20352	57846	4002	7049	3559	1285	6149	930	2782	2440	3184	634	1263	234
Juveniles																		
Gizzard shad	0	0	0	0	240	37	0	48	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified minnow	194	0	0	0	120	18	55	274	245	0	95	0	0	0	0	0	202	0
Unidentified bullhead	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0
Channel catfish	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0
Trout-perch	0	0	0	0	0	237	0	16	0	0	0	0	0	0	0	0	0	0
Unidentified darter	0	0	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0
Yellow perch	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0
Logperch	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	64
Total	194	0	0	0	360	439	55	354	245	0	95	0	0	0	0	0	203	64

Table D-8 (Cont'd)

Station	LE8		LE9		LE10		LE11				LE12		LE13		LE14			
Time	N		N		N		D		N		N		N		D		N	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	52.21	53.47	55.94	53.77	62.81	75.54	51.54	52.41	51.74	53.34	42.40	52.54	44.53	49.33	66.33	57.55	60.11	55.58
Species																		
Eggs																		
Freshwater drum	115	0	197	149	892	66	0	0	0	0	0	19	0	0	0	0	0	0
Unidentifiable	0	0	0	0	0	0	19	0	0	0		0	0	0	0	0	0	0
Total	115	0	197	149	892	66	19	0	0	0	0	19	0	0	0	0	0	0
Larvae																		
Gizzard shad	19	75	0	74	1.3	66	0	0	0	244	0	95	22	20	0	0	17	144
Rainbow smelt	19	0	89	19	0	79	0	0	0	19	24	362	0	401	0	0	0	18
Carp	0	37	0	37	302	26	78	0	19	0	0	0	0	0	0	0	0	0
Unidentified minnow	900	131	2039	768	1544	132	14253	439	1566	1294	1627	95	135	20	9769	243	2745	972
Channel catfish	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0
Trout-perch	0	0	0	0	0	0	0	0	0	0	0	57	0	20	0	0	0	0
Unidentified sunfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified darter	19	0	18	0	16	0	0	0	0	0	0	0	0	40	0	0	0	0
Logperch	0	19	0	19	32	0	0	0	0	187	0	38	0	0	0	0	0	108
Freshwater drum	19	37	36	56	16	0	0	0	19	19	0	0	45	0	0	0	33	18
Unidentifiable	0	19	0	0	0	0	0	0	0	56	0	0	0	0	0	0	0	0
Total	977	318	2181	911	2054	304	16330	439	1604	1819	1651	647	202	502	9769	243	2795	1259
Juvenile																		
Gizzard shad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	19	0	0	0	0	0	0	0	0	0	0	0	22	60	0	0	0	0
Unidentified minnow	287	0	697	0	32	0	0	0	1044	0	0	0	202	0	0	0	17	0
Unidentified bullhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Channel catfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trout-perch	0	0	0	0	0	0	0	0	0	0	0	19	0	20	0	0	0	0
Unidentified darter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow perch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Logperch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	306	0	697	0	32	0	0	0	1044	0	0	19	225	80	0	0	17	0

Table D-8 (Cont'd)

Station	LE15		Day		Night		
Time	N		Total	Total	Total	Total	
Depth	S	B	Surface	Bottom	Surface	Bottom	Total
Volume filtered (m^3)	55.81	66.89	227.77	221.10	786.01	762.66	1992.34
Species							
Eggs							
Freshwater drum	0	0	0	0	193	34	89
Unidentifiable	0	0	4	0	0	0	*
Total	0	0	4	0	193	34	90
Larvae							
Gizzard shad	0	45	27	5	424	488	357
Rainbow smelt	36	404	0	0	14	109	47
Carp	0	0	45	14	34	83	173
Unidentified minnow	717	314	8192	434	2275	4527	3633
Channel catfish	0	0	0	0	0	1	*
Trout-perch	0	0	0	0	0	26	10
Unidentified sunfish	0	0	0	0	3	3	2
Unidentified darter	0	0	0	0	4	5	4
Logperch	0	0	0	9	85	180	103
Freshwater drum	36	30	0	5	20	17	15
Unidentifiable	0	0	0	0	3	5	3
Total	788	792	8264	466	3168	5544	4347
Juveniles							
Gizzard shad	0	0	0	0	15	7	9
Rainbow smelt	0	30	0	0	3	7	4
Unidentified minnow	0	0	22	0	209	24	94
Unidentified bullhead	0	0	0	0	0	1	*
Channel catfish	0	0	0	0	0	1	*
Trout-perch	0	0	0	0	0	21	8
Unidentified darter	0	0	0	0	0	4	2
Yellow perch	0	0	0	0	0	7	3
Logperch	0	0	0	0	0	7	3
Total	0	30	22	0	226	73	120

Table D-9

Density (No./1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, on 4 August 1977. (All Samples Collected at Night.)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	68.44	70.88	X		X		56.71	54.78	51.36	49.33	51.50	48.22	51.61	48.81	48.57	44.55	56.68	52.74
Species																		
Larvae																		
Rainbow smelt	0	56					35	9	0	0	19	0	0	0	0	45	0	265
Unidentified cyprinid	44	42					88	128	78	101	136	0	232	82	165	45	53	57
Channel catfish	0	0					0	18	0	0	0	0	0	0	0	0	0	0
Unidentified darter	0	0					0	0	0	0	19	0	19	0	21	0	0	0
Freshwater drum	0	0					0	0	0	0	0	0	0	0	0	22	0	0
Total	44	98					123	146	78	101	174	0	251	82	186	112	53	322
Juveniles																		
Gizzard shad	15	0					0	0	0	0	0	0	0	0	0	0	0	0
Rainbow smelt	0	14					18	0	0	0	0	0	0	0	0	0	18	0
Spottail shiner	0	70					0	0	0	0	0	21	0	0	0	67	0	114
Unidentified minnow	15	0					18	0	0	0	58	0	97	0	288	0	900	0
Trout perch	0	0					0	0	0	0	0	0	0	0	0	0	0	19
Total	30	84					36	0	0	0	58	21	97	0	288	67	918	133

* = Density less than 1.

X = Not sampled.

Table D-10

Density (No./1000 m^3) of Ichthyoplankton taxen in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, on 10, 11, and 12 August 1977 (All Samples Collected at Night)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8		LE9		LE10	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	(68.48)[a]	6' 48	38.88	51.66	31.20	45.26	58.25	66.99	43.00	55.95	X		X		X		X		46.06	62.39
Species																				
Larvae																				
Rainbow smelt	0	58	0	0	72	110	34	15	0	18									0	0
Carp	29	0	0	0	0	0	0	0											0	0
Unidentified cyprinid	0	0	0	0	0	22	0	0	0	0									0	0
Unidentified darter	0	0	0	0	0	0	0	0	0	0									0	0
Freshwater drum	0	0	0	0	32	0	0	0	0	0									0	16
Total	29	58	0	0	64	132	34	15	0	18									0	16
Juvenile																				
Gizzard shad	0	0	0	19	0	0	0	0	0	0									0	0
Rainbow smelt	15	0	0	0	0	0	0	0	23	0									0	0
Spottail shiner	0	44	0	0	0	0	0	0	0	18									0	0
Unidentified sunfish	0	0	0	0	0	0	0	0	23	0									0	0
Total	15	44	0	19	0	0	0	0	46	18									0	0

[a] = Flowmeter malfunction (3.42 m^3); volume filtered assumed equal to that filtered by bottom net (68.48 m^3).

* = Density less than 2.

X = Not sampled.

Table D-11

Density (No/1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio on 16, 18, and 19 August 1977. (All Samples Taken at Night.)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	56.94	64.18	58.30	50.21	47.50	43.85	59.86	56.74	57.91	54.93	77.54	70.17	47.27	46.11	57.50	59.36
Species																
Eggs																
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Larvae																
Rainbow smelt	53	109	0	40	0	0	0	229	121	73	181	128	106	239	17	152
Unidentified minnow	35	0	0	40	21	0	0	0	0	18	0	0	63	22	17	34
Stonecat	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brook silverside	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0
Rainbow darter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	88	125	0	80	42	0	0	229	121	91	181	128	169	261	34	186
Juvenile																
Rainbow smelt	105	701	0	0	0	23	33	352	173	53	271	43	106	325	209	118
Spottail shiner	0	16	0	0	0	0	0	18	0	0	0	0	0	0	0	0
Unidentified minnow	0	0	0	0	0	0	0	0	17	0	13	0	0	0	0	0
Trout perch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	105	717	0	0	0	23	33	370	190	55	284	43	106	325	209	118

* = Density less than 1.

Table D-11 (continued)

Station	LE9		LE10		LE11		LE12		LE13		LE14		LE15		Total	Total	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	Surface	Bottom	Total
Volume filtered (m^3)	49.06	49.56	63.74	77.04	53.46	52.30	41.47	41.05	50.04	51 42	47.22	46.77	48.96	50.04	816.77	813.73	1,630.50
Species																	
Eggs																	
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	0	41	0	2	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	41	0	2	0	1
Larvae																	
Rainbow smelt	82	101	63	0	19	115	96	536	20	175	42	235	41	120	59	140	99
Unidentified minnow	0	0	0	13	19	38	48	24	0	0	64	21	20	20	17	15	16
Stonecat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*
Brook silverside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	*
Rainbow darter	0	0	0	0	19	0	0	0	0	0	0	0	0	0	1	0	*
Total	82	101	63	13	57	153	144	560	20	175	106	256	61	140	78	156	116
Juveniles																	
Rainbow smelt	265	363	235	273	19	57	121	292	240	154	233	137	408	619	163	238	201
Spottail shiner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Unidentified minnow	0	20	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2
Trout perch	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	1	*
Total	265	383	235	273	19	57	121	292	240	213	233	107	408	619	165	242	204

* = Density less than 1.

Table D-12

Density (No/1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio on 22 and 23 August 1977. (All Samples Taken at Night.)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	39.51	39.89	41.85	35.06	42.00	39.21	36.65	37.45	37.37	35.06	48.35	47.37	39.74	39.44	34.70	34.
Species																
Eggs																
Unidentified	0	0	0	114	167	0	273	0	107	143	186	0	0	0	0	0
Unidentifiable	0	0	72	0	0	102	0	0	0	0	0	0	0	25	0	0
Total	0	0	72	114	167	102	273	0	107	143	186	0	0	25	0	0
Larvae																
Alewife	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0
Rainbow smelt		0	0	29	0	0	109	27	0	0	0	0	0	25	0	29
Unidentified minnow	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified sucker	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0
Total	0	0	24	29	0	51	109	27	0	0	0	0	0	25	0	29
Juveniles																
Rainbow smelt	228	727	0	171	48	102	109	0	0	0	0	42	0	25	29	57
Channel catfish	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0
Total	228	727	0	171	48	128	109	0	0	0	0	42	0	25	29	57

Table D-12 (Continued)

Station	LE9		LE10		LE11		LE12		LE13		LE14		LE15		Total	Total	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	Surface	Bottom	Total
Volume filtered (m^3)	39.97	38.94	40.55	40.35	48.87	46.23	36.40	37.64	30.78	35.37	50.04	50.13	48.09	46.71	614.87	603.65	1218.52
Species																	
Eggs																	
Unidentified	50	0	0	0	61	43	0	27	0	57	0	20	0	0	57	25	41
Unidentifiable	0	0	0	0	0	0	55	0	0	0	0	0	21	0	10	8	9
Total	50	0	0	0	61	43	55	27	0	57	0	20	21	0	67	33	50
Larvae																	
Alewife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Rainbow smelt	0	0	0	25	0	0	0	0	0	0	0	0	0	21	7	10	8
Unidentified minnow	0	0	25	0	0	0	0	0	0	0	0	0	0	21	3	2	2
Unidentified sucker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Total	0	0	25	25	0	0	0	0	0	0	0	0	0	42	10	16	12
Juveniles																	
Rainbow smelt	125	128	99	1115	0	22	0	27	32	452	100	0	0	278	50	207	128
Channel catfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
Total	125	128	99	1115	0	22	0	27	32	452	100	0	0	278	50	209	129

Table D-13

Density (No/100 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections in Lake Erie on 29 and 30 August 1977. (All Samples Taken at Night.)

Station	LE1		LE2		LE3		LE4		LE5		LE6		LE7		LE8	
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B	S	B
Volume filtered (m^3)	52.27	54.60	54.88	51.85	39.18	41.26	49.35	50.72	54.43	54.35	52.25	50.99	45.14	52.03	41.96	44.71
Species																
Eggs																
Unidentified	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentifiable	0	0	0	0	0	0	0	0	92	386	0	98	0	38	0	0
Total	0	0	0	0	0	0	0	0	92	386	0	98	0	38	0	0
Larvae																
Rainbow smelt	0	0	0	0	0	0	0	0	129	0	38	20	22	0	0	0
Unidentified minnow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unidentified Centrarchid	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0
Logperch	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0
Total	0	0	0	19	0	0	0	0	129	0	38	20	22	19	0	0
Juvenile																
Rainbow smelt	38	18	0	0	0	0	101	0	0	0	0	0	0	0	0	0
Unidentified minnow	0	0	0	0	0	0	61	0	0	0	38	0	0	0	0	22
Total	38	18	0	0	0	0	162	0	0	0	38	0	0	0	0	22

*Density less than 1.

Table D-13 (Continued)

Station	LE9		LE10		LF11		LE12		LE13		LE14		LE15		Total Surface	Total Bottom	Total
Depth	S	B	S	B	S	B	S	B	S	B	S	B	S	B			
Volume filtered (m^3)	48.43	48.51	37.82	41.09	57.30	54.17	57.58	58.21	63.41	60.20	62.39	59.88	54.61	52.35	771.00	774.92	1545.92
Species																	
Eggs																	
Unidentified	0	0	0	0	17	74	0	0	0	0	16	0	0	0	3	5	4
Unidentifiable	0	0	0	0	0	0	0	0	0	0	0	50	0	0	6	40	23
Total	0	0	0	0	17	74	0	0	0	0	16	50	0	0	9	45	27
Larvae																	
Rainbow smelt	0	21	0	0	52	0	0	0	0	17	0	17	0	0	17	5	11
Unidentified minnow	0	0	0	0	0	0	0	0	0	0	0	0	37	0	5	0	3
Unidentified Centrarchid	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	1	*
Logperch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*
Total	0	21	0	0	52	0	35	0	0	17	0	17	37	0	22	7	15
Juvenile																	
Rainbow smelt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*
Unidentified minnow	0	0	53	0	17	0	17	0	16	0	16	0	0	0	16	1	8
Total	0	0	53	0	17	0	17	0	16	0	16	0	0	0	25	2	13

Density less than 1 = *

Table D-14

Density (No./1000 m^3) of Ichthyoplankton Taken in One-Half Meter Net Collections at LE9, Conneaut, Ohio From Mid-September through Mid-October 1977. (All Samples Taken at Night)

	9/14/77		9/29/77		10/13/77		10/24/77	
Station	LE9		LE9		LE9		LE9	
Depth	S	B	S	B	S	B	S	B
Volume filtered (m^3)	58.68	60.22	47.95	49.90	48.41	51.41	43.27	44.09
Species								
Juveniles								
Rainbow smelt	34	316	0	0	0	0	0	0
Total	34	316	0	0	0	0	0	0

Table D-13

Comparison of Larval Density(No./1000 m^3) in Surface and Bottom One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, from 2 June through 9 July 1977. Values are Combined Day and Night Total Catches per 1000 m^3 of Water

Station	Date	Surface	Bottom	Station	Date	Surface	Bottom
LR1	6/2-4	0	815	LR7	6/-4	50	73
	6/8, 9	0	108		6/-9	0	13
	6/13, 14	0	0		6/3-14	97	33
	6/20-23	0	38		6/0-23	0	0
	7/8, 9	511	147		6/9, 7/1	683	4,333
					7/8-9	1,263	234
LR2	6/2-4	610	558	LR8	6/-4	0	45
	6/8-9	64	46		6/-9	0	13
	6/13	0	26		6/3-14	0	0
	6/20-23	90	629		6/0-23	17	126
	6/29, 7/1	27,893	21,336		6/9, 7/1	544	1640
	7/8-9	10,230	29,698		7/8-9	977	318
LR3	6/2-4	204	582	LR9	6/-4	18	69
	6/8-9	44	41		6/-9	0	0
	6/11-14	0	220		6/3-14	10	0
	6/20-23	139	0		6/0-23	0	0
	6/29, 7/1	1,077	535		6/9, 7/1	222	4,443
	7/8, 9	220	439		7/8-9	2,181	911
LR4	6/2-4	0	29	LR10	6/-4	0	14
	6/8-9	16	13		6/-9	0	31
	6/13-14	19	0		6/3-14	0	0
	6/20-23	0	0		6/0-23	0	0
	6/29, 7/1	1,487	5,218		7/8-9	2,034	304
	7/8-9	3,339	1,285				
LR5	6/2-4	60	94	LR11	7/8, 9	8,955	1,138
	6/8-9	15	0				
	6/11-14	207	246	LR12	7/8, 9	1,651	647
	6/20-23	366	262				
	6/29, 7/1	1,269	1,447	LR13	7/8, 9	202	302
	7/8-9	4,421	1,699				
LR6	6/2-4	0	0	LR14	7/8, 9	6,434	492
	6/8-9	0	34				
	6/13-14	0	35	LR15	7/8, 9	788	792
	6/20-23	602	49				
	6/29, 7/1	1,269	1,447				
	7/8-9	119	12				

TABLE D-16

Comparison of Larval Density (No./1000 m^3) in Day and Night One-Half Meter Net Collections in Lake Erie, Conneaut, Ohio, from 2 June through 9 July 1977. Values are Combined Surface and Bottom Total Catches per 1000 m^3 of Water.

Station	Date	Day	Night
LE2	6/2/-4	280	592
	6/13-14	17	69
	7/8-9	355	39952
LE3	6/2-4	313	543
	6/13-14	9	196
LE5	6/2-4	8	136
	6/13-14	127	336
	7/8-9	3393	2603
LE7	6/2-4	17	103
	6/13-14	9	136
LE9	6/2-4	25	67
	6/13-14	0	8
LE11	7/8-9	8344	1713
LE14	7/8-9	5344	2057

Table D-17

Density (No./1000 m^3) of Ichthyoplankton Collected in Lake Erie, Conneaut, Ohio, from 2 June through 9 July 1977. (E = eggs, L = larvae, J = juveniles.)

	LE1												LE2											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	0	0	0	0	815	0	X	X	X	X	X	X	0	42	0	33	491	17	0	546	0	0	635	0
June 8, 9	0	0	0	0	108	0	X	X	X	X	X	X	0	44	0	0	46	0	X	X	X	X	X	X
June 13, 14	0	0	0	0	0	0	X	X	X	X	X	X	0	0	0	0	33	0	0	0	0	0	121	0
June 20, 22, 23	45	0	0	166	38	0	X	X	X	X	X	X	18	99	0	0	625	0	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	141	2789	0	144	2153	96
July 8, 9	X	X	X	X	X	X	0	511	194	0	147	0	0	509	0	0	210	0	20	20352	368	0	57866	439

	LE3												LE4											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	0	201	0	0	391	0	0	321	0	0	748	0	0	0	0	0	29	0	X	X	X	X	X	X
June 8, 9	0	44	0	0	41	0	X	X	X	X	X	X	0	16	0	0	13	0	X	X	X	X	X	X
June 13, 14	0	0	0	0	7	0	0	0	0	14	382	27	0	19	0	0	0	0	X	X	X	X	X	X
June 20, 22, 23	0	139	0	0	0	0	X	X	X	X	X	X	411	0	0	0	0	0	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	139	1077	0	162	535	0	X	X	X	X	X	X	288	1487	0	0	5238	0
July 8, 9	X	X	X	X	X	X	1364	4002	55	191	7069	354	X	X	X	X	X	X	16	3539	245	18	1285	0

	LE5												LE,											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	0	0	0	0	16	0	0	112	0	13	160	0	0	0	0	0	0	0	X	X	X	X	X	X
June 8, 9	0	15	0	0	0	0	X	X	X	X	X	X	0	0	0	0	34	0	X	X	X	X	X	X
June 13, 14	0	0	0	0	238	0	0	418	0	0	255	0	0	0	0	0	36	0	X	X	X	X		
June 20, 22, 23	2772	366	0	277	262	0	X	X	X	X	X	X	2826	33	0	178	49	0	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	1322	1269	0	839	144	0	X	X	X	X	X	X	590	1859	0	173	4168	0
July 8, 9	0	6147	95	0	930	0	36	2782	0	14	2440	0	X	X	X	X	X	X	0	318	0	0	634	0

X = Not sampled.

Table D-17 (Cont'd)

	LE7												LE8											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	0	0	0	0	33	0	0	96	0	0	110	0	0	0	0	0	45	0	X	X	X	-	X	X
June 8, 9	0	0	0	0	15	0	X	X	X	X	X	X	0	0	0	0	0	0	X	X	X	X	X	X
June 13, 14	0	0	0	0	17	0	0	182	0	0	90	0	0	0	0	0	0	0	X	X	X	X	X	X
June 20,, 22, 23	1136	0	0	107	0	0	X	X	X	X	X	X	106'	17	0	84	126	0	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	776	685	0	105	4853	0	X	X	X	X	X	X	1233	544	0	79	1649	20
July 8, 9	X	X	X	X	X	X	0	1263	203	0	234	64	X	X	X	X	X	X	115	977	306	0	318	0

	LE9												LE10											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	0	0	0	0	45	0	0	35	0	0	94	0	0	0	0	0	14	0	X	X	X	X	X	X
June 8, 9	0	0	0	0	0	0	X	X		X	X	X	0	0	0	0	31	0	X	X	X	X	X	X
June 13, 14	0	0	0	0	0	0	0	19		0	0	0	0	0	0	0	0	0	X	X	X	X	X	X
June 20, 22, 23	26	0	0	0	0	0	X	-	-	X	X	X	244	0	0	133	0	0	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	838	227	0	223	4443	22	X	X	X	X	X	X	X	X	X	X	X	X
July 8, 9	X	X	X	X	X	X	197	2181	697	149	911	0	X	X	X	X	X	X	892	2054	32	66	304	0

	LE9												LE10											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
June 8, 9	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
June 13, 14	X	X	X		X	X	X	X		(	X	X	X	X	X	X		X	(	X	X	X	X	X
June 20, 22, 23	X	X	X	X	X	X	X	-		X	X	X	X	X	-	X	X	X	X	X	X	X	X	X
June 29, July 1	X	X	X	X	-	X	X	-		X	'	X	(	X	X	X	X	X	X	X	X	X	X	(
July 6, 9	• 19	16330	0	0	439	0	0	1604	' 4	0	181	0	X	X	X	X	X	X	0	1651	0	19	64/	19

X - Not sampled.

Table D-17 (Cont'd)

	LE13												LE14											
	Day						Night						Day						Night					
	Surface			Bottom			Surface			Bottom			Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
June 8, 9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
June 13, 14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
June 20, 22, 23	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
July 8, 9	X	X	X	X	X	X	0	202	225	0	502	80	0	9769	0	0	243	0	0	279	17	0	1259	0

	LE15											
	Day						Night					
	Surface			Bottom			Surface			Bottom		
	E	L	J	E	L	J	E	L	J	E	L	J
June 2, 3, 4	X	X	X	X	X	X	X	X	X	X	X	X
June 8, 9	X	X	X	X	X	X	X	X	X	X	X	X
June 13, 14	X	X	X	X	X	X	X	X	X	X	X	X
June 20, 22, 23	X	X	X	X	X	X	X	X	X	X	X	X
June 29, July 1	X	X	X	X	X	X	0	788	0	0	792	30

X = Not sampled.

Scope of Work
Additional
Ichthyoplankton Sampling

Scope of Work for Additional Ichthyoplankton Sampling at the Proposed U.S. Steel Lakefront Plant Site at Conneaut, Ohio

Ichthyoplankton samples are to be collected at five stations along the water intake transect line of the proposed U.S. Steel Lakefront Plant. Final siting of the proposed water intake structure will be based, in part, upon analysis of the data generated in this survey. Sampling sites are to include the presently proposed water intake site (30-foot depth contour) and two possible alternative sites (35-foot and 40-foot depth contours). Samples are also to be collected at two nearshore stations (10-foot and 20-foot depth contours). Statistical comparisons between the nearshore and offshore areas and between individual stations are to be performed based upon the total abundance of all larvae as well as upon the abundance of selected taxonomic units. These taxonomic units will be selected upon inspection of the data by the concerned resource agencies in concert with the sampling agency and will include species of sport and commerical importance, State endangered species, and selected forage species.

The sampling agency, in consultation with a qualified biometrician, will select appropriate methods for statistical analysis of the data to determine statistical distribution of the larvae. Final analysis of the data will be coordinated with the U.S. Fish and Wildlife Service.

Field Procedures

The five sampling stations are to be located at the intersections of the 10-foot, 20-foot, 30-foot, 35-foot, and 40-foot depth contours (International Great Lakes LWD) with the proposed water intake transect line. This line runs approximately parallel to and 5,000-feet east of the Conneaut Harbor East Breakwater. Exact coordinates of the line should be obtained from the U. S. Steel Corporation. The approximate distances from shore to each of the stations as measured along the intake transect are as follows:

10-foot station = 1,000 feet

20-foot station = 3,000 feet

30-foot station = 5,000 feet

35-foot station = 6,000 feet

40-foot station = 8,000 feet

To aid in the consistent location of stations on each sampling day, a system of marker buoys or range lights should be employed.

Samples are to be collected every seven days beginning 16 April 1979, and ending 13 August 1979, resulting in 18 discrete sampling days. When scheduled sampling is delayed, due to unfavorable weather conditions, the intervals between the remaining sample days should be reduced appropriately so that 18 collections will have been made in as uniformly distributed a manner as possible by the end of the sampling season.

Samples are to be collected only at night, starting approximately 45 minutes after legal sunset.

Samples are to be collected with a 0.75 m diameter conical plankton net with mesh no larger than 510 u and no smaller than 450 u and a length:diameter ratio of not less than 3:1.

A flow meter such as the General Oceanics Model 2030, or one of comparable reliability and efficiency, should be suspended across the mouth of the net to allow calculation of sample volumes.

The cod bucket should consist of a polyethylene jar that can be threaded onto a polyvinyl chloride collar on the cod end of the net. The jar sides should have openings screened with cloth of the same mesh size as the net to facilitate concentration of the samples.

The net towing assembly should consist of a hand-operated winch and crane arm to facilitate uniform oblique sampling. The crane arm design should incorporate a clinometer to allow rapid calculation of sampling depth from the tow line angle and length. The net end of the towing assembly should not have a bridle system across the front of the net. A net assembly such as that used by the Great Lakes Fishery Laboratory (GLFL) or one of similar design should be used. The assembly used by the GLFL consists of a depressor board below the net, a tow bar assembly on the net frame, and a tow line attachment at the top of the tow bar. The tow line consists of thin diameter aircraft cable. Details of the system can be obtained by writing the Director of the GLFL at the following address:

Dr. Joseph Kutkuhn
Great Lakes Fishery Laboratory
1451 Green Road
Ann Arbor, MI 48105

Four oblique tows are to be performed at each sampling station on each sampling day. A hand winch should be used to maintain a uniform rate of net descent and ascent during each tow to produce a uniform sampling of the entire water column. The deepest part of each tow should bring the net within approximatley three feet of the bottom. Tows should be parallel to shore and should alternate in towing direction unless rough water prevents tows with a following sea. Tow speed should be approximately four to five km/hr during the entire tow. Tow time should be approximately three to four minutes, resulting in a towing distance of approximately 250 m. The volume sampled during each tow should equal approximately 100 m^3 unless net clogging reduces sampling efficiency.

Samples are to be preserved in the field in five percent formalin. The following information should be included on the sample jars and in the field log:

Station	Replicate
Date	Tow direction
Time	Flow meter readings

Information to be recorded for each station in the field log:
Water temperature at one meter intervals through water column.
Dissolved oxygen (ppm) at one meter intervals through water column.
Other information as appropriate.

Laboratory Procedures

All ichthyoplankton samples are to be returned to the laboratory for sorting, identification, and enumeration. No samples are to be subsampled. Samples should be diluted in the sorting dish so that all larvae can be seen without requiring agitation of the contents of the dish. This procedure should result in the most efficient recovery of larvae and avoid under-representation of those species having relatively small larvae. All fish should be identified to the lowest practicable taxonomic unit. Table 1 lists those species or units that might be present and identifiable at the Conneaut site. For each larvae identified, the appropriate life stage should be indicated following the system described by Snyder (1976)*. If the sampling agent wishes to use another system, it may be included along with the Snyder system.

All sorted, identified, and enumerated fish should be held as voucher samples separated by sample date, station, and lowest identified taxonomic unit. Replicate samples at each station need not be maintained separately.

* Snyder, Darrel E. 1976. Terminologies for Intervals of Larvae Fish Development. ppg. 42-60 in Great Lakes Fish Egg and Larvae Identification: Proceedings of a Workshop. U.S. Fish and Wildlife Service, Office of Biological Services, National Power Plant Team. Ann Arbor, MI 220 pages.

Data Presentation

Larval densities should be presented as numbers of individuals in each identified taxonomic unit/1,000m^3 for each tow and total number of larvae/1,000m^3 for each tow. The actual volume sampled in each tow should also be indicated. The mean density, standard deviation, and standard error should be calculated for each station on each sample day for each identified taxonomic unit and for the total number of larvae based upon the previously calculated densities.

TABLE D-18

Identifiable Taxonomic Units of Ichthyoplankton That May Be Found In Lake Erie in the Vicinity of Conneaut, Ohio*

Longnose gar	*Lepisosteus osseus*
Alewife	*Alosa pseudoharengus*
Gizzard shad	*Dorosoma cepedianum*
Rainbow smelt	*Osmerus mordax*
Unidentified Esocid	*Esox* sp.
Carp	*Cyprinus carpio*, *Carassius auratus*, and hybrids
Emerald shiner	*Notropis atherinoides*
Spottail shiner	*Notropis hudsonius*
Unidentified Cyprinid	*Cyprinidae*
Quillback	*Carpiodes cyprinus*
White sucker	*Catostomus commersoni*
Unidentified redhorse	*Moxostoma* sp.
Channel catfish	*Ictalurus punctatus*
Stonecat	*Noturus flavus*
Troutperch	*Percopsis omiscomaycus*
Burbot	*Lota lota*
Unidentified temperate bass	*Morone* sp.
Rockbass	*Ambloplites rupestris*
Unidentified sunfish	*Lepomis* sp.
Unidentified blackbass	*Micropterus* sp.
Unidentified crappie	*Pomoxis* sp.
Johnny darter	*Etheostoma nigrum*
Unidentified *Etheostoma* sp.	*Etheostoma* sp.
Yellow perch	*Perca flavescens*
Log perch	*Percina caprodes*
Unidentified *Percina* sp.	*Percina* sp.
Walleye	*Stizostedion vitreum*
Freshwater drum	*Aplodinotus grunniens*
Unidentified sculpin	*Cottus* sp.

* Some of these taxonomic units may not be readily differentiated if the larvae in question are not captured in sufficient numbers. Such larvae should then be identified at the next higher taxonomic level.

APPENDIX "E"

Comments Pertaining to Modification of the
Lakefront Plant Proposal and Mitigation of
Environmental Impact

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
Surveillance and Analysis Division
536 South Clark St
Chicago, Illinois 60605

December 5, 1978

Colonel Daniel D. Ludwig
District Engineer
U. S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Siting and Design of the Raw
Water Intake

Dear Colonel Ludwig:

One of the remaining outstanding issues with regard to the U. S. Environmental Protection Agency's (US EPA) comments on the Draft EIS for the U. S. Steel Lakefront Plant is the issue concerning the design and location of the water intake structure in Lake Erie. In attempting to resolve this issue, we have discussed our concerns with your staff, the U. S. Fish and Wildlife Service, and the U. S. Steel Corporation.

With respect to intake design, we believe wedge-wire screens with minimum practicable openings currently represent the best technology, and, therefore, should be utilized by the applicant. Concerning the intake location, the Draft EIS and the environmental assessment fail to show if extending the intake into deeper water would significantly affect entrainment.

We do not anticipate a significant difference in entrainment impacts from extending the intake because the slope of the lake bottom is nearly flat. However, in the absence of data to support locating the intake at the proposed site, we believe additional data should be obtained.

To resolve the intake issue, we propose that tentative approval be given for construction of a wedge-wire intake at the proposed site, with the understanding that sampling would be conducted in the summer of 1979 to determine if extending the intake would significantly reduce entrainment. If entrainment would be significantly reduced by extending the intake, the applicant should be required to locate the intake accordingly.

We believe the scope of the necessary sampling should be minimal. Only a short period of time and selected game species would be necessary to compare the proposed site to sites 5 feet and possibly 10 feet deeper. The U. S. Fish and Wildlife Service would offer expertise in selecting the game species and the sampling period.

This approach has not been formally approved by any of the responsible Federal and State agencies. We suggest you offer this proposal to the various agencies for comments and or/concurrence. If there are any questions, contact Joseph Sovcik at A.C. 312/353-2307.

Sincerely yours,

Donald E. Wallgren
Deputy Director

United States Steel Corporation

600 GRANT STREET
PITTSBURGH, PENNSYLVANIA 15230

December 20, 1978

Colonel Daniel D. Ludwig
U. S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Attention: Mr. Paul G. Leuchner

Gentlemen:

We acknowledge receipt of your December 18, 1978 telecopy transmittal of the U. S. EPA Region V December 5, 1978 letter regarding the proposed steel plant intake structure.

U. S. Steel will agree to incorporate, during the detailed design phase of the project, the best practicable technology to minimize entrainment. We will also agree to undertake a limited sampling program for selected game species in order to determine the most practical intake location. This program would take place after the project has been authorized and would be coordinated with the appropriate resource agencies.

If you have any questions regarding this response, please contact Mr. J. A. Jernigan.

Very truly yours,

Stephen P. Curtis

COMMONWEALTH OF PENNSYLV
PENNSYLVANIA FISH COMMISSION
DIVISION OF ENGINEERING
Robinson Lane
[illegible]

January 5, 1979

Mr. Wesley Gilbertson
Special Assistant for Planning
Department of Environmental Resources
Room 818, Executive House
Harrisburg, PA 17120

Re: Siting and Design of Water Intake
U.S. Steel Conneaut Plant

Dear Mr. Gilbertson:

The series of letters submitted regarding siting and design of the water intake structure for the proposed U.S. Steel Conneaut Steel Plant have been discussed with various staff members. As a result, the Pennsylvania Fish Commission has very serious reservations about this plan and cannot agree to its adoption and inclusion in the final EIS.

Our areas of concern include the following:

1. Colonel Ludwig states that Stephen Curtis agreed to use the best available technology (i.e., wedge wire screens). This is definitely not what Stephen Curtis says in his December 20, 1978, letter. He says they will use the best practicable technology to minimize entrainment. There is a vast difference between best available technology (BAT) and best practicable technology (BPT). A method U.S. Steel may consider practicable could be very different from the best available method.

2. Curtis states the testing program would take place after the project has been authorized. This is definitely unacceptable. All sampling work must be completed adequately and the report written and shown to be acceptable before anything can be considered for authorization. An after-the-fact program cannot be considered.

3. The sampling program must be for all species present, not just game species. If any of the forage base species are effected this will in turn effect the game species. It does no good to say very few game species are impinged or entrained if their food supply is lessened to any appreciable extent.

4. The sampling period should extend from April 15 through July 31. Samples, both day and night, should be at intervals no greater than three or four days. Samples should be taken at all depths where there would be induced current due to pumping maximum quantities of water which the proposed plant might require.

5. All species taken during sampling are to be reported in number per unit of effort (i.e., no./cu. ft., no./gal., etc.).

In summary, the Pennsylvania Fish Commission cannot and will not approve the material as presented. There is so much potential for damage to the Lake Erie fishery because of the proposed facility, and until U.S. Steel provides adequate information to show that this fishery will be protected we must do all we can to prevent authorization of the propcsed project.

Sincerely,

Jack G. Miller

Jack G. Miller, Chief
Fisheries Environmental Services

JGM:dcs

cc: Ralph Abele
Daniel Ludwig
Donald Wallgren
Edward Miller
Wilbert Hobbs
Roger Kenyon
Charles Kulp

United States Steel Corporation

600 GRANT STREET
PITTSBURGH, PENNSYLVANIA 15230

January 9, 1979

Colonel Daniel D. Ludwig
U. S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Attention: Mr. P. G. Leuchner

Gentlemen:

In accordance with the January 9, 1979 telephone request of Mr. Paul Leuchner, we would like to clarify several points of our December 20, 1978 letter regarding the proposed steel plant intake structure.

Intake Design

U. S. Steel will incorporate the best available technology which has been demonstrated to be practicable in minimizing entrainment. The Environmental Protection Agency, in their letter of December 5, 1978, has stated wedge wire screens currently represent the best technology. If that opinion prevails during the detailed design phase of the project then such screens, or an equivalent proven technology, would be utilized.

Additional Sampling

U. S. Steel agrees to undertake additional sampling as recommended in the December 5, 1978 EPA letter. The scope of this sampling program would be coordinated with the appropriate resource agencies.

Intake Location

The final siting of the intake structure would be determined as a function of the NPDES permitting action. It is anticipated that current design technology, data already collected, and data from the additional sampling program would be utilized by U. S. Steel and the appropriate agency/agencies under whose authority that NPDES permit will be granted.

If the clarifications presented above do not satisfy your concerns, please advise Mr. J. A. Jernigan.

Very truly yours,

Stephen P. Curtis

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
DIVISION OF ENGINEERING
Robinson Lane
BELLEFONTE, PENNSYLVANIA 16823

January 26, 1979

Colonel Daniel D. Ludwig
District Engineer
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

Re: January 9, 1979, letter from Stephen P. Curtis to Col. Daniel D. Ludwig Regarding Siting and Design of Water Intake, Proposed U.S. Steel Conneaut Plant

Dear Colonel Ludwig:

The subject letter of January 9, 1979, certainly states U.S. Steel's position much more clearly.

If the sampling is done as agreed upon by the persons attending the January 18, 1979, meeting with U.S. Steel in Pittsburgh, then it is possible for the Pennsylvania Fish Commission to give tentative approval to the intake structure. Final approval will follow if the sampling program demonstrates adequately that a particular location will not adversely impact upon the Lake Erie fishery.

Our people will be available to help to design the sampling schedule and procedures as agreed upon at the January 18 meeting and will also wish to review any preliminary intake designs.

Thank you for a copy of this letter of clarification and we hope to hear from you soon regarding the sampling program.

Sincerely,

Jack G. Miller, Chief
Fisheries Environmental Services

JGM:dms

cc: Ralph Abele
Edward Miller
Wilbert Hobbs
Delano Graff
Roger Kenyon
Wesley Gilbertson

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

IN REPLY REFER TO: LMR

JAN 26 1979

Colonel Daniel D. Ludwig
District Engineer
U.S Army Engineer District
Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

We have reviewed your letter of 29 December 1978 which outlined the position of the Region V office of the United States Environmental Protection Agency (U.S. EPA) regarding the design and siting of the water intake structure for the proposed United States Steel Conneaut Lakefront Steelmaking Facility.

We agree with the two basic points presented in EPA's proposal. We think these two points should be presented in the final EIS, if possible, and be included as conditions of the Section 10/404 permit.

Representatives from our Columbus Field Office (Region 3) and State College Field Office (Region 5) met with representatives from U.S. Steel and your office on Thursday, January 18, 1979. At this meeting the U.S. EPA's proposal and letter of December 5, 1978 were discussed. Also, there was mutual agreement concerning preparation of a scope of work for the additional sampling for submission two weeks following the meeting. Our Columbus Field Office is preparing this scope of work which should be submitted to you on or before February 5, 1979.

An extension of time until February 16, 1979 for coordination of mutual effort is toward preparation and revision of the final EIS was asked for and tentatively agreed to by Mr. Paul Leuchner of your staff.

We are reviewing the proposed Fish and Wildlife Management Plan prepared by Fahringer, McCarty, Grey, Inc. and transmitted to us by your letter of January 9, 1979. Comments and recommendations concerning this plan will be submitted to you before the February 16, 1979 deadline.

Sincerely yours,

Charles A. Hughlett
Acting Regional Director

cc: EPA, Chicago
Dept. of Natural Resources, Columbus
U.S. Steel, Pittsburgh

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Federal Building, Fort Snelling

Twin Cities, Minnesota 55111

FEB 8 1979

Colonel Daniel D. Ludwig
District Engineer
U.S. Army Engineer District
Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

Please find enclosed the Scope-of-Work for additional Ichthyoplankton Sampling at the Proposed U.S. Steel Lakefront Plant site at Conneaut, Ohio.

This Scope-of-Work was developed as a result of the January 18, 1979 meeting between representatives of the U.S. Steel Corporation, the Buffalo Corps District, and the U.S. Fish and Wildlife Service. We have sent an advanced copy of the Scope-of-Work to the U.S. Steel Corporation to allow them to begin examination of the document knowing that any recommended changes will be incorporated in the final document to be sent to them by your office.

Sincerely yours,

Charles A. Hufnagel

Charles A. Hufnagel
Acting Regional Director

cc: U.S. Steel Corporation

Enclosure

Scope-of-Work for additional Ichthyoplankton Sampling at the Proposed U. S. Steel Lakefront Plant Site at Conneaut, Ohio

Ichthyoplankton samples are to be collected at 5 stations along the water intake transect line of the proposed U. S. Steel Lakefront Plant. Final siting of the proposed water intake structure will be based, in part, upon analysis of the data generated in this survey. Sampling sites are to include the presently proposed water intake site (30' depth contour) and two possible alternative sites (35' and 40' depth contours). Samples are also to be collected at two nearshore stations (10' and 20' depth contours). Statistical comparisons between the nearshore and offshore areas and between individual stations are to be performed based upon the total abundance of all larvae as well as upon the abundance of selected taxonomic units. These taxonomic units will be selected upon inspection of the data by the concerned resource agencies in concert with the sampling agency and will include species of sport and commercial importance, state endangered species, and selected forage species.

The sampling agency, in consultation with a qualified biometrician, will select appropriate methods for statistical analysis of the data to determine statistical distribution of the larvae. Final analysis of the data will be coordinated with the U. S. Fish and Wildlife Service.

Field Procedures

The five sampling stations are to be located at the intersections of the 10', 20', 30', 35', and 40' depth contours (International Great Lakes LWD) with the proposed water intake transect line. This line runs approximately parallel to and 5000' east of the Conneaut Harbor east breakwater. Exact coordinates of the line should be obtained from the U. S. Steel Corporation. The approximate distances from shore to each of the stations as measured along the intake transect are as follows:

10' station = 1000'
20' station = 3000'
30' station = 5000'
35' station = 6000'
40' station = 8000'

To aid in the consistent location of stations on each sampling day, a system of marker buoys or range lights should be employed.

Samples are to be collected every seven days beginning 16 April 1979 and ending 12 August 1979, resulting in 18 discrete sampling days. When scheduled sampling is delayed, due to unfavorable weather conditions, the intervals between the remaining sample days should be reduced appropriately so that 18 collections will have been made in as uniformly distributed a manner as possible by the end of the sampling season.

Samples are to be collected only at night, starting approximately 45 minutes after legal sunset.

Samples are to be collected with a 6.75 m diameter conical plankton net with mesh no larger than 510u and no smaller than 450u and a length:diameter ratio of not less than 3:1.

A flow meter such as the General Oceanics Model 2030, or one of comparable reliability and efficiency, should be suspended across the mouth of the net to allow calculation of sample volumes.

The cod bucket should consist of a polyethylene jar that can be threaded onto a polyvinyl chloride collar on the cod end of the net. The jar sides should have openings screened with cloth of the same mesh size as the net to facilitate concentration of the samples.

The net towing assembly should consist of a hand-operated winch and crane arm to facilitate uniform oblique sampling. The crane arm design should incorporate a clinometer to allow rapid calculation of sampling depth from the tow line angle and length. The net end of the towing assembly should not have a bridle system across the front of the net. A net assembly such as that used by the Great Lakes Fishery Laboratory (G.L.F.L.) or one of similar design should be used. The assembly used by the GLFL consists of a depressor board below the net, a tow bar assembly on the net frame, and a tow line attachment at the top of the tow bar. The tow line consists of thin diameter aircraft cable. Details of the system can be obtained by writing the Director of the GLFL at the following address:

Dr. Joseph Kutkuhn
Great Lakes Fishery Laboratory
1451 Green Road
Ann Arbor, Michigan 48105

Four oblique tows are to be performed at each sampling station on each sampling day. A hand winch should be used to maintain a uniform rate of net descent and ascent during each tow to produce a uniform sampling of the entire water column. The deepest part of each tow should bring the net within approximately 3 feet of the bottom. Tows should be parallel to shore and should alternate in towing direction unless rough water prevents tows with a following sea. Tow speed should be approximately 4 to 5 km/hr during the entire tow. Tow time should be approximately three to four minutes, resulting in a towing distance of approximately 250 m. The volume sampled during each tow should equal approximately 100 m^3 unless net clogging reduces sampling efficiency.

Samples are to be preserved in the field in 5% formalin. The following information should be included on the sample jars and in the field log:

Station	Replicate
Date	Tow direction
Time	Flow meter readings

Information to be recorded for each station in the field log:
Water temperature at 1 meter intervals through water column
Dissolved oxygen (ppm) at 1meter intervals through water column.
Other information as appropriate.

Laboratory Procedures

All ichthyoplankton samples are to be returned to the laboratory for sorting, identification, and enumeration. No samples are to be subsampled. Samples should be diluted in the sorting dish so that all larvae can be seen without requiring agitation of the contents of the dish. This procedure should result in the most efficient recovery of larvae and avoid under-representation of those species having relatively small larvae. All fish should be identified to the lowest practicable taxonomic unit. Table 1 lists those species or units that might be present and identifiable at the Conneaut site. For each larva identified, the appropriate life stage should be indicated following the system described by Snyder (1976)*. If the sampling agent wishes to use another system, it may be included along with the Snyder system.

All sorted, identified, and enumerated fish should be held as voucher samples separated by sample date, station, and lowest identified taxonomic unit. Replicate samples at each station need not be maintained separately.

* Snyder, Darrel E. 1976. Terminologies for Intervals of Larvae Fish Development. ppg. 42-60 in Great Lakes Fish Egg and Larvae Identification : Proceedings of a Workshop. U. S. Fish and Wildlife Service, Office of Biological Services, National Power Plant Team, Ann Arbor, MI 228 pages.

Data Presentation

Larval densities should be presented as numbers of individuals in each identified taxonomic unit/1000m^3 for each tow and total number of larvae/1000m^3 for each tow. The actual volume sampled in each tow should also be indicated. The mean density, standard deviation, and standard error should be calculated for each station on each sample day for each identified taxonomic unit and for the total number of larvae based upon the previously calculated densities.

TABLE 1

Identifiable Taxonomic Units of Ichthyoplankton that may be found in Lake Erie in the vicinity of Conneaut, Ohio*

Longnose gar	Lepisosteus osseus
Alewife	Alosa pseudoharengus
Gizzard shad	Dorosoma cepedianum
Rainbow smelt	Osmerus mordax
Unidentified Esocid	Esox sp.
Carp	Cyprinus carpio, Carassius auratus, and hybrids
Emerald shiner	Notropis atherinoides
Spottail shiner	Notropis hudsonius
Unidentified Cyprinid	Cyprinidae
Quillback	Carpiodes cyprinus
White sucker	Catostomus commersoni
Unidentified redhorse	Moxostoma sp.
Channel catfish	Ictalurus punctatus
Stonecat	Noturus flavus
Trout-perch	Percopsis omiscomaycus
Burbot	Lota lota
Unidentified temperate bass	Morone sp.
Rock bass	Ambloplites rupestris
Unidentified sunfish	Lepomis sp.
Unidentified black bass	Micropterus sp.
Unidentified crappie	Pomoxis sp.
Johnny darter	Etheostoma nigrum
Unidentified Etheostoma sp.	Etheostoma sp.
Yellow perch	Perca flavescens
Log perch	Percina caprodes
Unidentified Percina sp.	Percina sp.
Walleye	Stizostedion vitreum
Freshwater drum	Aplodinotus grunniens
Unidentified sculpin	Cottus sp.

* Some of these taxonomic units may not be readily differentiated if the larvae in question are not captured in sufficient numbers. Such larvae should then be identified at the next higher taxonomic level.

ODNR

Ohio Department of Natural Resources

OFFICE OF OUTDOOR RECREATION SERVICES
Fountain Square • Columbus, Ohio 43224 • (614) 466-4974

February 15, 1978

Colonel Daniel D. Ludwig
District Engineer
U.S. Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

RE: Siting and Design of Water Intake Facility, U.S. Steel Corporation Proposed Lakefront Plant, Conneaut, Ohio

Dear Colonel Ludwig:

The Department has considered the position of the U.S. Environmental Protection Agency, Region V, regarding the above referenced structure. The following comments are submitted for your consideration.

1. The plan to approve the intake structure, if best available technology would be utilized and limited sampling would be initiated to finalize siting of the intake, appears to be satisfactory. However, a Corps of Engineers permit and other appropriate authorization (NPDES) to be issued on this project must contain the specific condition that the intake structure will be located in deeper water (5 feet or 10 feet deeper) if it is determined that entrainment is significantly reduced at the deeper site.

   The U.S. Steel Corporation has indicated that the sampling program would take place after the project has been authorized and would be coordinated with the appropriate resource agencies. The authorization for this project should guarantee that if the resource agencies concur on the siting of the intake in deeper water, that the design and location of the structure will be modified accordingly.

2. The distance from shore and the depth at which the intake is located will have a major influence as to whether or not impingement of fish will be serious. Generally, the further offshore and the deeper its location, the better. The intake pipe should be buried so fish won't lead along the pipe. The

JAMES A. RHODES, Governor • ROBERT W. TEATER, Director • DONALD O. OLSON, Chief

intake should be west of the plant discharge. A thorough knowledge of the fish population and their migration patterns would be necessary in order to determine best location.

3. A vertical intake with a velocity cap will draw water horizontally and help reduce impingement of fish. A reduction in intake volume will lessen ichthyoplankton entrainment which cannot be reduced by techniques to reduce impingement.

Finally, the Department's Division of Wildlife has coordinated with the U.S. Fish and Wildlife Service, Columbus Field Office, regarding the scope of study for the 1979 sampling program. The Department reserves final comment on the siting of the water intake structure until processing of the NPDES permit or other appropriate authorization. We appreciate the opportunity to provide these comments.

Design of the Pier Extension and Unloading Dock

Sincerely,

Roger D. Hubbell, Assistant Chief
Office of Outdoor Recreation Services

RDH:sjd

cc: Ralph Bernhagen
Gene Wright, OEPA



MID-ATLANTIC FEDERAL REGIONAL COUNCIL

Curtis Building, Room 922
6th and Walnut Streets
Philadelphia, Pennsylvania 19106
(215) 597-9114

Region III

Thomas C. Maloney
Chairman

James F. Mallody
Vice Chairman

November 21, 1978

Colonel Daniel D. Ludwig, P.E.
District Engineer
Department of the Army
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

The Federal Regional Council has no comment on the alternative design concept of the proposed unloading pier in Conneaut Harbor as described in your letter of November 14, 1978.

The U.S. Environmental Protection Agency, a member of the FRC, is the Federal agency best qualified to review and comment on the proposal.

Thank you for providing the FRC with an opportunity to review this revision.

Sincerely,

John J. Boyle
Staff Director

HUD/EPA - Department of Housing and Urban Development; Department of Health, Education and Welfare; Environmental Protection Agency; Department of Agriculture; Department of Commerce; Department of Labor; Department of Transportation; Community Services Administration; Department of Energy.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

NOV 27 1978

Colonel Daniel D. Ludwig
District Engineer
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

We wish to compliment the U.S. Steel Corporation on the development of a new alternative design concept for the proposed unloading pier in Conneaut Harbor. It appears that this modification will minimize the commitment of bottom habitat and assure adequate circulation to maintain environmentally acceptable water quality.

The plan has been discussed with Region V and they also believe the design, as presented with your letter of November 14, 1978, to be acceptable from an environmental standpoint.

However, we see no explanation of where or how the shoreline connection to the new pier will be constructed. The position, size and approach to the facility should be described in detail.

This proposal, as well as any other alternatives or modifications, must be presented in the Final Impact Statement so that a person reviewing the lakefront project can evaluate the project in its entirety and all its complexities.

We wish to be informed of any additional revisions or modifications to the original plans for the project.

We look forward to the completion of the Final Impact Statement and the resolution of our concerns.

Sincerely yours,

Nicholas DeBenedictis, Director
Office of Intergovernmental Relations
and Public Awareness

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER (mep)
Ninth Coast Guard District
1240 East 9th St.
Cleveland, Ohio 44199
Phone: 216-522-3919
FTS 293-3919

16475
19 November 1978

Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, NY 14203

Re: Telcon 28 November 1978 Mr. Jerry Olmes/Mr. Paul Leuchner concerning Buffalo District Corps of Engineers ltr NCBCO-S77-492-3 dtd 14 Nov 1978

Dear Sir:

This office has reviewed referenced letter and has no objection to the open pier design from an environmental standpoint. Also, we have no objection concerning extension of the open pier design to the shoreline.

Sincerely,

S. A. WILSON
Captain, U. S. Coast Guard
Chief, Marine Safety Division
By direction of the Commander,
Ninth Coast Guard District

Copy to:
SECREP III

ODNR
Ohio Department of Natural Resources
Fountain Square • Columbus, Ohio 43224 • (614) 466-3770

November 29, 1978

Colonel Daniel D. Ludwig, District Engineer
Buffalo District Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

RE: U.S. Steel Corporation Lakefront Plant - Unloading Pier Alternative Design

Dear Colonel Ludwig:

The alternate concept pier design has been reviewed and the following comments are submitted for your consideration:

1. The proposal should assure adequate water circulation and minimize the commitment of aquatic habitat. The alternative design is, therefore, acceptable from an environmental standpoint.

2. Regarding the Department's concerns with water quality degradation associated with operation and maintenance of the pier extension and new pier: construction of the new facilities and pier maintenance dredging should be confined to the period June 1 through August 31 to reduce impacts to fish and ichthyoplankton during the critical spawning and migration period.

3. The expected "excellent water circulation" resulting from the open pier design and dredged depth may result in a reduction of ice cover (similar to the ice boom placement northwest and northeast of the breakwalls, as proposed in the Winter Navigation Season Extension project).

4. The Department remains concerned about the lack of public access to the coastline and breakwall east of the pier facility. An important component in the projects' mitigation plan should be the bridging of the West Breakwall opening and providing a walkway to the end of the breakwall. Every consideration should be given to protecting and enhancing the coastal area with a green belt around the project site.

JAMES A. RHODES, Governor • ROBERT W. TEATER, Director

5. Regarding the consultant's recommendation to extend the pier to the shoreline with the open pier design: the proposal appears acceptable provided the shore is properly protected and no unnecessary fill is placed in the harbor adjacent to the shoreline.

Thank you for the opportunity to provide these comments. We look forward to continued coordination on this project.

Sincerely,

Roger D. Hubbell

Roger D. Hubbell, Assistant Chief
Office of Outdoor Recreation Services

RDH:sjd

cc: Wayne S. Nichols

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
HARRISBURG PA 17120

SPECIAL ASSISTANT FOR PLANNING

December 1, 1978

Colonel Daniel D. Ludwig
U. S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

Pursuant to your request of November 2, 1978 which transmitted the alternative design of the pier extension for the proposed lake front steel mill, I requested reviews by the Pennsylvania Fish Commission and the Bureau of Water Quality Management of DER.

I am attaching a copy of the comments dated November 28 from the Fish Commission for your information. DER's Bureau of Water Quality Management has no comment.

Sincerely yours,

WESLEY E. GILBERTSON

WEG/ch
Att.

cc: Mr. Debenedictis - Mr. Margolin - Mr. Jernigan - Mr. Williams - Mr. Allardyce - Mr. Margolis - Mr. Curtis - Dr. Lippson - Ms. Friedman - Mr. Daley - Mr. Wallgren

COMMONWEALTH OF PENNSYLVANIA

November 28, 1978

SUBJECT: Review of U.S. Steel's Plans of Lakefront Plant Dock Facilities for Corps of Engineers, Buffalo

TO: Wesley Gilbertson
Special Assistant for Planning
Department of Environmental Resources

FROM: Edward R. Miller
Assistant Executive Director
Pennsylvania Fish Commission

As per your recent request, we have reviewed the alternative design prepared by the U. S. Steel Corporation for an unloading pier to be constructed in Conneaut Harbor.

As a result we offer the following comments:

In regards to potential harbor-shore water stagnation, the improved dock design (including the shore extension link not shown on drawings) should significantly reduce potential stagnation, hazardous to fish life. This is particularly true for the species which associate with the bottom i.e., walleye, perch, drum, catfishes, and smallmouth bass.

Our concern with the downstream movement of accumulated operational wastes from unloading of vessels still remains. Over a period of years the operations at the proposed site, even with adequate circulation, may be responsible for deposits of materials which retain high C.O.D. and B.O.D. characteristics. The Fish Commission would like assurances that such a situation will not place our downlake spawning and nursery grounds in future jeopardy.

Please forward this information, along with your comments, to the District Office of the Corps of Engineers as soon as possible.

ERM:dl
cc: R. W. Abele
J. G. Miller
R. Kenyon

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Environmental and Technical Services Division
Environmental Assessment Branch
Oxford, Maryland 21654

December 4, 1978

Col. Daniel D. Ludwig
District Engineer
Buffalo District
Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This letter is in regard to your November 14, 1978, request for National Marine Fisheries Service (NMFS) review of an alternative design for the construction of a proposed unloading pier by U.S. Steel Corporation (NCBCO-S 77-492-2) in Conneaut Harbor.

The NMFS has reviewed the information presented by the applicant and discussed the proposed changes with the U.S. Fish and Wildlife Service. The modification to open-pile construction would eliminate or reduce the stagnant water problem that was present with the original solid fill design. However, the NMFS would prefer a pier alignment that would reduce the need to dredge additional areas of shallow water within Conneaut Harbor. In line with this, the NMFS requests that the applicant be required to investigate alternative pier alignments which would reduce the need for this additional dredging.

Sincerely yours,

Robert L. Lippson, Ph.D.
Research Coordinator

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Federal Building, Fort Snelling,
Twin Cities, Minnesota 55111

IN REPLY REFER TO:

DEC 11 1978

Colonel Daniel D. Ludwig
District Engineer
U. S. Army Engineer District
Buffalo
1776 Niagara Street
Buffalo, New York 14207

Re: NCBCO-S 77-492-3, U. S. Steel Corporation

Dear Colonel Ludwig:

This letter provides the response of the U. S. Fish and Wildlife Service to your letter of 14 November 1978, regarding the proposed alternative design for the unloading pier in Conneaut Harbor as presented by U. S. Steel in their letter of 2 November 1978, to you.

We are pleased to see that flow-through capability could be incorporated into the pier design. Such a design should significantly reduce possible stagnation and sedimentation that would have reduced the productivity of the southeast harbor area. However, we are still concerned that the new pier design is on the same alignment as the original pier design. Such an alignment will require the dredging of over 8 acres of the already limited shallow water area within Conneaut Harbor. This shallow water zone in the southeast corner of Conneaut Harbor is a primary spawning and nursery ground for the fish of the harbor and surrounding area. Any alignment alterations that could result in a berthing site in a zone that is presently dredged would reduce the loss of these shallow water zones and should be considered.

A determination of alternative berthing sites in Conneaut Harbor by the Operations Branch of the Buffalo Corps District would be appreciated. If no feasible alternative sites can be found, the permanent loss of fish production in the proposed pier dredging area should be considered as a unavoidable impact in the final determination on the permit.

If the proposed alignment proves to be the only feasible alternative, the extension of the pier to the shore would not have serious adverse impacts when compared to the impacts of the berthing dredge area and would be acceptable. Therefore, we would have no objection to this extension as it has been presented.

Sincerely yours,

W. Ellis Klatt

Acting Regional Director

cc: Mr. D. Wallgren, Deputy Director, US [illegible]icago, IL
Mr. W. Nichols, Chief, Div of Water, ODNR, Columbus, OH
Area Manager, FWS, ELAO, East Lansing, MI

COMMONWEALTH OF PENNSYLVANIA
OFFICE OF THE GOVERNOR
HARRISBURG

MILTON J. SHAPP
GOVERNOR

January 5, 1979

Colonel Daniel D. Ludwig
District Engineer
Corps of Engineers
1776 Niagara Street
Buffalo, New York

Dear Colonel Ludwig:

The purpose of this letter is to advise you about the present status of resolution of issues relating to the terrestrial and aquatic aspects of the proposed U.S. Steel plant near Conneaut. It is my view that the major questions concerning these issues have been resolved.

As you know, when the land use issues for the Turkey Creek area emerged from among the many complex problems concerning this plant as a primary unresolved question of the Draft Environmental Impact Statement, my office undertook a role designed to reach solutions which would be satisfactory to the various concerned interests. I am very pleased to advise you that this objective has been accomplished. Special investigations have been undertaken by U. S. Steel's fish and wildlife consultant, Fahringer, McCarty, Grey, Inc., and by the Pennsylvania Fish Commission and the Pennsylvania Game Commission to acquire a more precise data base and to provide a clearer understanding leading to acceptable mitigative measures. Close communication has been maintained with officials of the U. S. Steel Company and its consultants throughout this process.

As a result, U. S. Steel's proposed land use plan and fish and wildlife management proposals now include major changes from the original submission to the Corps of Engineers on which the Environmental Impact Studies were made. Without attempting, in this communication, to reiterate in detail the many innovative and helpful mitigative measures that all parties have now agreed on, let me state that the questions have been resolved relating to the reproduction and passage of salmon and other fish species, the preservation of habitat for other forms of aquatic life, and maintenance of good habitat for such terrestrial wildlife as woodcock, song birds and animals. As a result of six months of intense negotiation, I am pleased that through the efforts of all concerned, these important fish and wildlife questions have been resolved.

This process can provide a timely example for all public and private interests of how a major industrial facility with untold economic opportunities can be accommodated with minimal environmental impact. I want to commend the Fish Commission, the Game Commission and the United States Steel Corporation for the spirit of responsibility shown during these extended and crucial negotiations. Without the flexibility exhibited by all parties, these agreements could not have been reached.

Considering the tremendous opportunities for the Commonwealth presented by this proposed steel plant, I want to reiterate my complete support for the issuance of permits for construction by the United States Corps of Army Engineers.

Sincerely,

MILTON J. SHAPP
Governor

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA FISH COMMISSION
P.O. Box 1673
Harrisburg, Pennsylvania 17120
717-787-6883

EXECUTIVE DIRECTOR

January 30, 1979

Col. Daniel D. Ludwig, P.E.
District Engineer, Buffalo District
U. S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Re: Fish and Wildlife Management Plan
for U. S. Steel Corporation's Proposed
Lakefront Plant, December 1978

Dear Col. Ludwig:

The Pennsylvania Fish Commission has reviewed the subject management plan and wish to make the following comments:

1. Page 33, third paragraph. The conditions described here are not normal conditions, but conditions during very low flows. It is not unusual for Lake Erie tributaries to have gravel bars form across the mouth during low flows. These usually last only a short time. To base an opinion on such a few observations is poor practice.

2. Since the purpose of this plan is to determine the effect the 1700 MW plant would have on migratory fishes, the fish sampling period should have been performed from March at least through November 1. To begin the sampling period in late April and end it in August means the run of coho and rainbow trout that might use Turkey Creek wasn't even sampled. In October of 1977, both coho and rainbow trout were observed in the pool at the mouth and there was an opening into Lake Erie. Since Aquatic Ecology Associates' report covers the period of late April 1977 to mid-June 1978, why wasn't all this data collected and analyzed rather than such a restricted



portion? Are they trying to minimize the role of migratory salmonids in Turkey Creek?

3. Page 38, fourth paragraph. The potential value of a stream has nothing to do with presence or absence of a fisherman's path or the ease of fishing. If use of these criteria was accepted practice many of our headwater trout streams would be of little value. Use or ease of use are not indicators of value.

4. Page 41. The mitigation proposals are in line with what was previously conditionally approved by the Pennsylvania Fish Commission. Our first preference would be for fish passage facilities, flow augmentation to the upper portion of Turkey Creek and habitat modifications to increase spawning potential as given in the second paragraph.

   A combination of the second paragraph on page 41 and (1), (3) and (4) of the alternate mitigation proposals (also page 41) could possibly give both Ohio and Pennsylvania improved migration and spawning potential for salmonids.

5. Discussion, pages 42-43. This section appears to cover very well the problems and possibilities of maintaining and enhancing the salmonid runs into the upper Turkey Creek Watershed. The problems are elaborated upon more than the positive possibilities, but if U. S. Steel is willing to fully coordinate this development of the fish passage culvert and improved flows and habitat with the resource agencies, the Pennsylvania Fish Commission will give tentative approval to this part of the development plan. More detailed plans and procedures will have to be studied before final approval can be given. This is not to be construed as approval of all or any other segment of the proposed plant.

   We are also concerned that after approval and construction of the plan for Turkey Creek, U. S. Steel may decide at a later date to utilize this area for storage or other purposes which would destroy any positive benefits that this plan may bring about. Future use must not destroy any improvement resulting from this initial proposal.

Thank you for the opportunity for this review and we expect to hear from U. S. Steel on future detailed planning and engineering.

Sincerely,

Ralph W. Abele
Executive Director

COUNTY OF ERIE
Office of the County Executive
Erie, Pennsylvania 16501

RUSSELL D. ROBISON
COUNTY EXECUTIVE

AREA CODE 814
TELEPHONE 454-1581

January 30, 1979

Colonel Daniel D. Ludwig, P.E.
District Engineer
Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

I have reviewed the Fish and Wildlife Management Plan for U.S. Steel Corporation's proposed lakefront plant and submit the following:

1. The proposed Wildlife Management Area (Map 2) be increased by 173 acres as an extension to Raccoon Creek Park along the shore of Lake Erie; in addition, Lake Road be extended by the U.S. Steel Corporation for public access along the full length of this added property to the County Park.

2. The proposed tubing of Turkey Creek be sealed against storm water drainage from manufacturing and storage areas to protect the integrity of water quality in Turkey Creek.

3. Parts of the proposed wildlife mitigation area were previously designated for solid waste disposal for plant related activities (Please see figure I-39 D.E.I.S.) Since this area is now proposed to be used as greenbelt, the Corps of Engineers should address where the U.S. Steel Corporation proposes to relocate the solid waste disposal sites.

4. The proposed wildlife mitigation area south of the ConRail Railroad tracks be open to public hunting to ascertain that the deer population will not destroy wildlife management intended for the woodcock species.

5. An irrevocable guarantee that the greenbelt areas will be free from encroachment by activities of the U.S. Steel Corporation in future years.

I appreciate the opportunity to review and comment on the Fish and Wildlife Management Plan and welcome the opportunity to meet with you and State officials for further consideration of the mitigation process for the proposed U.S. Steel Lakefront Plant.

Very sincerely,

Russell D. Robison
County Executive

RDR/dd

cc: Governor Richard L. Thornburgh

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
HARRISBURG, PA 17120

SPECIAL ASSISTANT FOR PLANNING

January 31, 1979

Colonel Daniel D. Ludwig
U. S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This refers to the "Fish and Wildlife Management Plan" for U. S. Steel's proposed plant.

The Bureau of Water Quality Management of DER has called attention to the need for an Erosion and Sedimentation Control Plan and its implementation in connection with alteration of Turkey Creek.

We are generally familiar with this plan, but we believe that the principal Pennsylvania agencies concerned with this report will be the Game Commission and the Fish Commission.

This reply also covers the Commerce Department.

Very truly yours,

WESLEY E. GILBERTSON

WEG/ch
cc: Mr. Abele
Mr. Bowers
Mr. Welsh

OFFICE OF
EXECUTIVE DIRECTOR
TELEPHONE
AREA CODE 717,787-3633

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
P. O. BOX 1567
HARRISBURG, PA. 17120

ADMINISTRATIVE DIVISIONS

February 6, 1979

Colonel Daniel D. Ludwig, P.E.
District Engineer
Corps of Army Engineers
1776 Niagara Street
Buffalo, NY 14207

Attention Mr. Paul Leuchner

In re: U. S. Steel Corp.'s Proposals for Mitigation of Anticipated Fish and Wildlife Losses Resulting from the Construction of the Proposed Lakefront Steel Plant, West Springfield, Pennsylvania, and Conneaut, Ohio

Dear Colonel Ludwig:

In accordance with your request of January 9, 1979, we have completed a review of the document submitted by the U. S. Steel Corporation under application No. 77-492-3, wherein several proposals are made to offset Fish and Wildlife losses anticipated as a result of the proposed construction of U. S. Steel's Lakefront Plant. The report, entitled Fish and Wildlife Management Plan for U. S. Steel Corp.'s Proposed Lakefront Plant, Erie County, Pennsylvania, and Ashtubula County, Ohio, as prepared for U. S. Steel by Fahringer, McCarty and Grey, Inc., under date of December 19, 1978, lists recommendations which were the subject of earlier discussions between the Game Commission and U. S. Steel's consultant. Our findings are as follows:

Population Estimates

Representatives of Fahringer, McCarty and Grey, Inc. and our agency met onsite during the fall and winter months of 1978. With the exception of this meeting, field evaluations and measurements of habitat and populations were conducted independently. The population estimates and habitat data as calculated by the Game Commission's biologists are contained in the Commission's report of December 12, 1978, forwarded to your office under date of January 5, 1979. A comparison of the population estimates and habitat acreage presented in the Commission's report differs considerably from those figures supplied by the applicant. For example, the Commission found that there were 399 acres of suitable woodcock habitat located within the Pennsylvania segment of the plant construction area. The consultant, on the other hand, identifies 107 acres of what is termed as typical resident woodcock feeding habitat. In our opinion, the use of feeding habitat alone

is too restrictive a measure of the overall habitat value to a migratory bird such as the woodcock. The woodcock population projections made by the applicant are based on 20 year old data, not applicable to the study area. As a result, we feel the populations are underestimated.

The applicant's report fails to discuss the population or habitat data for the other species present onsite. A review of Tables II and III, found in the Appendix of the Commission's report, will illustrate that the total wildlife values involved onsite extend far beyond the issue of woodcock.

Terrestrial Management Recommendations

On page 29 of the applicant's report, actual management and research provisions which are to be implemented under terms of this plan are described. The outlines of the program are acceptable. These outline proposals must be reduced to a positive written and detailed program containing specific goals and organizational procedures, including the scope of the resources to be employed in accomplishing the program, before final Commission approval can be granted.

Protection and Preservation - Greenbelt Areas

On pages 5 and 29 and on map 2 of the applicant's draft report, advanced copies of which were submitted to the Commission in December of 1978, two greenbelt areas of approximately 500 acres each are proposed. Except for the map depiction, references to the "Eastern Greenbelt" shown along Elmwood Road have been deleted from the final version. The applicant proposes these greenbelts and identifies them as areas which will not be impacted by primary construction activities. As explained in our report of December 12, 1978, we see the greenbelt areas as a valuable means of reducing the overall project impacts. It is especially important that the area identified as the Turkey Creek Greenbelt be maintained for the life of the plant. Negotiations concerning the extent, location and protection to be given to these greenbelt areas were still in progress when the applicant abruptly terminated their involvement in this discussion and elected to submit its report to the Corps. It was our position at that time, and still is, that the identification and protection of these greenbelt areas are necessary from a standpoint of reducing overall impacts. Both the Turkey Creek and the Eastern Greenbelt, totaling some 1,000 acres, became a critical value in the formula used in arriving at the overall mitigation requirements for the U. S. Steel proposal. After identifying the greenbelt areas, the applicant stated that only 1,766 acres of the total acreage in the U. S. Steel site will be impacted. The applicant, however, has resisted the Commission's efforts at defining a procedure for absolute protection for these greenbelt areas, arguing that until final plant designs are available, it will not be known to what extent, if any, encroachments will be necessary. Although the value of the greenbelt areas will be compromised by this uncertain treatment, the Commission, nonetheless, could agree to the greenbelt concept with possible future encroachments if procedures were to be outlined for the regulation of these

encroachments. The applicant argues on pages 5 and 6 of its report that the existing permitting process will require them to mitigate any future encroachments. They go on to cite a list of federal and state statutes which would require, in their estimate, a continuing review process to offset all significant construction and encroachment impacts.

We argue to the contrary and foresee various circumstances under which encroachments such as road construction, railroad spur extension, material stockpiles and various activities which would not encroach upon streams or wetlands or require any federal coordination could be carried out piecemeal and over a long period of time so that the cumulative effect of such actions would significantly detract from the overall habitat value of the greenbelt areas. In furtherance of this argument, it should be noted that even in instances where a permit would be required, a sedimentation and erosion control plan, for example, these permits require compliance only with certain very specific regulations, such as the control of erosion and offsite sedimentation. This type of permitting has no provisions whatever for mitigation of wildlife losses.

It is our opinion that the applicant cannot on one hand offer the establishment of two separate 500 acre greenbelts which, in effect, reduces his overall mitigation requirements and obligations, only to be released to encroach upon these areas in an unregulated fashion at future dates. We see this as a serious flaw in the overall proposal.

We are not opposed to an ongoing process of review and mitigation for all significant encroachments in the greenbelt areas with the understanding, of course, that there could be encroachments, the nature of which are so objectionable as to preclude any approval without extensive mitigation. At the other end of the spectrum, it is also conceivable that certain encroachments could be accommodated, the effects of which would be so insignificant as to require any mitigation at all. It will be our continued insistence, that until such time as guidelines are in effect to regulate and mitigate future encroachments, the mitigation package will be incomplete.

Finally, the applicant fails to offer any proposals to avoid problems which will occur as a result of the fencing of approximately 2,770 acres of the steel plant location. A serious deer overpopulation problem has historically occurred within such enclosures. In the absence of removal or control features, overbrowsing will soon destroy the food supply for the deer and seriously compromise habitat values for other species. The greenbelt areas, since they will be included within the fence, will lose any value originally held. Disease and starvation will eventually overtake the captive deer population.

In summary, the issues of protection for the proposed greenbelts and control of the captive deer herd are both critical elements in achieving a workable mitigation arrangement. The applicant must be required to face both issues squarely and propose solutions for incorporation into the final draft of the Environmental Impact Statement.

Please refer any questions or comments concerning this report to Mr. G. J. Grabowicz, Division of Land Management, in our Harrisburg Office.

We would like to request at least two copies of the final Environmental Impact Statement for this project to facilitate a complete and timely review.

Very truly yours,

Glenn L. Bowers
Executive Director

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

IN REPLY REFER TO:
LMR

FEB 14 1979

Colonel Daniel D. Ludwig
District Engineer
U.S. Army Engineer District
Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This responds to your letter of January 3, 1979, requesting our review and comments on the proposed Fish and Wildlife Management Plan for U.S. Steel Corporation's Proposed Lakefront Plant, dated December 1978.

Our comments on the adequacy of the proposal are submitted under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) but do not constitute our report under the Act on the project as advertised by Public Notice 77-492-3 (NCBCO-S) dated March 11, 1977. We recognize that the proposed Fish and Wildlife Management Plan addresses only a portion of the total fish and wildlife resource conservation measures needed for the project.

WILDLIFE MANAGEMENT PLAN

While we take exception to several of the assumptions presented in the Introduction and to others upon which the Terrestrial Management Recommendations are based, we do feel that the 1,127 acre (456 hectare) tract of land proposed as a wildlife management zone would provide adequate mitigation for projected wildlife habitat losses if the following conditions are met:

1. U.S. Steel assure the long-term integrity of the 1,127 acre (456 hectare) proposed wildlife management tract and the proposed 507 acre (205 hectare) "greenbelt" on Upper Turkey Creek. Such assurance could take the form of a 50-year restrictive easement, subject to renewal, or some other form mutually agreeable to U.S. Steel and the concerned resource agencies.

2. U.S. Steel agree to plan, fund, and implement a detailed management program in coordination with the Ohio Division of Wildlife and the Pennsylvania Game Commission, as appropriate.

   a. U.S. Steel agree to coordinate with the appropriate state resource agencies (Ohio Division of Wildlife and Pennsylvania Game Commission) in developing a comprehensive program for the wildlife management lands.

   b. U.S. Steel agree to fund and implement the program developed under condition 2a.

3. U.S. Steel agree to allow limited, controlled deer hunting in the wildlife management tract, if necessary, as part of the management program. Heavy browsing by an uncontrolled deer population could seriously reduce the success of vegetative manipulation efforts.

More detailed comments on the terrestrial section of the proposed plan are provided in a supplement to this letter.

FISH MANAGEMENT PLAN

Again, we take exception to some of the statements and assumptions presented in the fish management section of the proposed Fish and Wildlife Management Plan. At this time, we cannot endorse the Aquatic Management Recommendations presented as mitigation of projected aquatic and riparian habitat losses, as we do not feel that the "greenbelt" proposal has as yet been seriously and adequately addressed by U.S. Steel (see U.S. Fish and Wildlife Service letters of April 21, 1977, and August 31, 1978). While we are providing our comments on the "culvert" proposal, we are still firmly committed to our position that the preservation of the fauna of Turkey Creek and the riparian vegetation of the ravine is only possible through the establishment of a "greenbelt." We are providing more detailed comments on both the "greenbelt preservation" alternative and the "culvert mitigation" alternative in supplements to this letter.

The Service will soon be submitting its official comments with respect to issuance of the requested Department of the Army permit for the Lakefront Plant. Our recommendation to avoid, mitigate, or offset project-caused fish and wildlife resource losses will be coordinated with the affected State fish and wildlife agencies and will address all project features including intake and discharge structures, harbor modifications, solid waste disposal areas, wastewater and surface runoff control, streamflow augmentation, Turkey Creek modification, and potential blockage of access to existing public structures and waters.

We appreciate the additional time allowed to prepare this response and hope that avenues of communication between your office, the Service, and U.S. Steel can remain open to allow a resolution of these matters.

Sincerely yours,

Charles A. Bullock

Charles A. Bullock
Acting Regional Director

Attachment

cc: Pennsylvania Game Commission
Pennsylvania Fish Commission

Supplemental comments on the Proposed Fish and Wildlife Management Plan for U.S. Steel Corporation's Proposed Lakefront Plant.

COMMENTS ON ABSTRACT

Page 1, paragraph 3: The U.S. Steel Corporation (USS) believes that running Turkey Creek through a 1700-meter culvert is essential for efficient plant operation. The basis for this belief should have been fully explained many months ago when state and federal agencies first expressed objections to filling the Turkey Creek channel and riparian areas. In commenting on the Corps' draft environmental impact statement (DEIS) for the entire project, the Service asked why proposed buildings and storage areas could not be arranged on the property so as to preserve a "greenbelt" along Turkey Creek at the 630' and 640' contours. We are still waiting for a detailed answer to this question. See Chapter 6 DEIS.

The third paragraph also indicates that USS needs the culvert to protect water quality in Turkey Creek. As we pointed out in comments on the DEIS, water quality could be preserved by the previously mentioned "greenbelt," by use of covered conveyors for carrying raw materials across the creek, and by grading the land surface at places where roadways or railways pass through the "greenbelt" and cross the creek. USS has not responded publicly to these suggestions.

Page 1, paragraph 5: The ABSTRACT indicates that the upper Turkey Creek ecosystem could receive flow augmentation to permit summertime residency by salmonid smolts if desired by the resource agencies. However, the temperature of the water at the proposed water intake depth exceeds 20° C from approximately July through August and could limit summertime salmonid use of Turkey Creek.

Page 1, last paragraph: Change the word "assure" to assures." Insert the word "proposed" before the phrase "1127-acre." Delete the word "proposed" before the phrase "wildlife management."

Page 2, condition 2: Revise condition 2 (including a. and b.) to read: "U.S. Steel Corporation develop, fund, and implement a comprehensive management program for designated wildlife lands in cooperation with and approved by the Ohio Division of Wildlife and Pennsylvania Game Commission."

COMMENTS ON INTRODUCTION

Page 3: Insert the heading "COMMENTS ON STATEMENT OF COMMITMENT" between the second and third paragraphs. Correct the date in the third paragraph from April 12, 1977, to April 21, 1977.

Page 3, paragraph 4: The discussion of ecological replacement should have mentioned that the restoration of natural ecological communities on land such as sub-marginally productive agriculture land would constitute replacement and would not seriously impact industrial or agricultural production or growth.

Page 3-4: In the discussion of ideas for mitigation, resource substitution is criticized because of a "lack of precedent and apparent inconsistency with the prevailing political-economic system." There are precedents in the U.S. where companies have traded or given lands to a governmental agency for perpetual public use to mitigate corporate actions elsewhere. Secondly, the argument that resource substitution is inconsistent with the prevailing political-economic system is unfounded. We cannot believe that governmental agencies will object to resource substitution simply because the land which the government would receive under this concept would not have been purchased with public money. Resource substitution appears to have been discarded because it was less economically attractive than selected resource enhancement.

Page 4, paragraph 3: The plan further states "...selected-resource enhancement approach is thought to be the best way to mitigate the ecological losses..." This may have been chosen based on economics, not on ecological principles. The plan does not say how the decision was arrived at or by whom. The whole plan is based on the idea that selected-resource enhancement is the best mitigation, which in fact it may not be.

Page 4, last paragraph: "Two basic goals must guide the planning and performance of mitigation work: (1) minimizing losses by employing wildlife management techniques and (2) maximizing benefits by providing a net gain in recreational opportunity and/or a significant gain of scientific information." We take exception to (2) because a net gain in recreational opportunity and scientific knowledge does not make a bad situation go away. These criteria were chosen simply because this mitigation plan happened to call for adding land to public ownership and research.

Page 5, paragraph 1: STATEMENT OF COMMITMENT implies that resource agencies are deeply concerned about only that portion of the Turkey Creek "greenbelt" in Pennsylvania. The paragraph is misleading. The Service expressed concern for the entire watershed and advised the Corps, in an April 12, 1977 letter, that "the Service will oppose any proposal that does not adequately protect the existing streambed and riparian vegetation." The Service position on this matter remains unchanged.

The STATEMENT OF COMMITMENT does not mention the proposed 456-hectare management area. The Service and the Pennsylvania Game Commission have asked that the long-term integrity of the tract be assured, but the plan document contains no such assurance. The long-term integrity of the Upper Turkey Creek greenbelt should also be assured.

COMMENTS ON WILDLIFE PLAN

Page 8: The word "ecotype" is misused. The plan uses "ecotype" instead of "vegetation type." An ecotype is comparable to a variety in a plant species. Aspen are "nearly always lethally attacked by several species of fungi." We know that aspen stands fall into destruction relatively fast after maturity but had never heard that the tree deaths are due to fungi.

Page 12, second paragraph: Delete "/or" at end of fifth line and insert the phrase "nor should it be a" before the word "major" in sixth line.

Page 13, second paragraph: Delete the word "only," substituting "USS/Corps." Change the word "proposed" in the first line to "proposal." Delete the word "has" at end of first line. In the second line, delete the word "the" before the word "displacement," substituting "possible." Delete the word "Some" in the third line. Delete the phrase "alternative plant design incorporating the" from the third and fourth lines.

Page 13, items 5, 6, and 7, near bottom of page: Add "(Refer to Figure 1-4 on page 1-21 of DEIS)"

Page 14-15: Vegetation is discussed in terms of species present rather than structure of herb, shrub, and overstory layers. Woodcock are associated with vegetation structure, soils, and moisture and not with specific plant species. Woodcock use many different species of vegetation from Minnesota to Maine and Ontario to Louisiana but the structure is similar between them. Under heading entitled "Meadows, Invaded Meadow and Marsh," woodcock use of these areas for singing grounds and summer roost areas are not discussed and should be recognized. Grazed lands are often used by groups of night roosting woodcock.

Page 16, paragraph 4: Capturing and moving an endangered species is not suitable mitigation. It could only be acceptable as a last ditch effort to protect individuals and/or if the habitat these individuals were moved to was vacant. Protection could be provided by moving the proposed Thompson Road eastward extension farther to the south.

Page 16, paragraph 6: Perhaps better wording would be near neutral rather than "alkaline or near alkaline." What is near alkaline?

Page 17, paragraph 4: If silky dogwood and red osier dogwood are not being used, it is because the physical structure of the overstory and understory are not adequate. It is not because they are poor woodcock species.

Page 17, paragraph 6: The concentrations of woodcock are not unnatural but they might be unusually dense or observed infrequently. Poor choice of words!

Page 20: Woodcock populations in a given area do fluctuate greatly in spring and fall during the migration. Breeding populations of woodcock are very hard to survey.

Page 29: The TERRESTRIAL MANAGEMENT RECOMMENDATIONS include phrases such as intensive vegetative manipulation, monitoring of wildlife populations, planting and supervision of vegetative manipulation, and administrative and supervisory duties. However, it is not clear from the brief summary or the discussion that follows (pages 29-31) who the active agents would be. In other words, it is not clear who actually would carry out these tasks and who would pay for them. Although we assume USS would be responsible, this subject should be covered explicitly in the plan. A long-term binding agreement would be desirable.

There is no mention of regulated public access to the management area. Regulated public hunting would be desirable to control the size of the white-tailed deer population that would flourish within the management area. Furthermore, the plan fails to mention the duration of management and research activities. We assume that the management area would remain undeveloped and that management/research activities would be continued for the life of the Lakefront Plant. This matter also should be covered explicitly in the plan.

Page 30, last paragraph: Any areas that contain rare or endangered flora or fauna or record-sized trees within the proposed wildlife management zone, the upper Turkey Creek greenbelt, the areas not planned for development, or areas where planned development could be practically modified should be avoided unless it can be shown that habitat manipulation would benefit the species in question.

Page 31, paragraph 5: This research is basically one of following local movements to document overall habitat use. It would require techniques like radio-telemetry or intensive habitat searches.

The designation of good woodcock habitat and the subsequent acreages calculated may be somewhat conservative. The report consistently refers to certain plant species as the basis for good habitat, when in fact vegetation structure is the key. Therefore, the base for their calculations of woodcock numbers and habitat could be questioned.

While we have disagreed with a number of basic assumpions presented in the wildlife plan and may disagree with calculated acreages of prime woodcock feeding habitat and calculated woodcock densities, we do agree that the basic plan should provide adequate mitigation if the conditions stated in our cover letter are met.

The following comments are offered for consideration in any management program planning. Many of the points are amplifications of ideas expressed in the Fish and Wildlife Management Plan.

In order to fully judge the potential of the proposed management area, several pieces of additional information are needed. First a vegetation type map of the management area is needed to help determine its potential for manipulation to benefit woodcock. Second, a soil type map of the management area is also needed to determine the potential of the area to support certain vegetation types which are used by woodcock.

In the management area the conversion of some vegetation types probably will be required to optimize woodcock production. Other vegetation types will not be converted but plant succession will have to be set back. For example, the aspen type will have to be periodically cut and/or burned to maintain the proper vegetative structure for woodcock. Therefore, the management plan must include a rotational treatment of the aspen and perhaps other vegetative types. The management plan must be a detailed document which describes specific treatments for specific portions of the management area.

When prescribing a set of management applications for woodcock, consideration must be given to their varying habitat preferences and requirements depending on time of year. For example, small openings which have sparse, low ground cover are required for breeding male display (singing grounds). High vegetation screens (trees) between singing grounds may increase the number of breeding males on an area.

Although woodcock may use the same vegetation type for brood rearing and nesting, the structure of the vegetation used for each is considerably different. Bourgeois (1977) and Rabe (1977) found that nests were located in areas of lower tree density and basal area than areas where broods were found. Further, nests were more likely to be found on well-drained sites and nearer forest openings.

Rabe (1977) also found that habitat preferences varied through the summer. In Michigan, he found that older age was very low in the spring. Immature aspen use increased greatly in the fall but was avoided by flying broods. Aspen was preferred through the summer. The mixed deciduous forest type was preferred in both nesting and brood rearing but solitary birds preferred immature aspen during the breeding season. Kroll and Whiting (1977) found that in east Texas, the important factors in determining good woodcock habitat versus poor habitat were: greater basal area, closer to potential feeding areas (stream alluvium and openings), sparse mid- and understory vegetation, sandy soils with high organic content and high K and Zn soil concentration.

Moist stream bottoms or similar moist situations are important in late summer and during dry years because they provide a food resource when other areas are too dry. However, these same areas may not be useable by woodcock in spring because they are flooded.

In addition, night roosting activity has been reported in Minnesota, Wisconsin, Maine, Louisiana and other States. Woodcock use clear cuts, grazed pastures, mowed hayfields and other similar situations for night roosting. In addition, areas of exposed soil with small water-holding depressions will attract and concentrate woodcock in summer and fall during crepuscular periods. Social interactions occur at these locations.

Bourgeois, A. 1977. Quantitative analysis of American Woodcock nest and brood habitat. Proc. Woodcock Symp 6:109-118

Kroll J. and R. Whiting. 1977. Discriminant function analysis of woodcock winter habitat in east Texas. Proc. Woodcock Symp 6:63-71

Rabe, D. 1977. Structural analysis of woodcock diurnal habitat in northern Michigan. Proc. Woodcock Symp 6:125-134

COMMENTS ON FISH PLAN

Page 33, paragraph 1: The proposed Lakefront plant would have significant direct impacts not only upon Turkey Creek but also upon the associated area of Lake Erie. The harbor modifications, water intake and discharge structures, and surface runoff discharge from the plant site would all contribute to the impacts upon Lake Erie.

Page 33, paragraph 3: As indicated, the photos were taken in August 1978, a period when the precipitation was 20 percent below the 40- year summer mean. While the normal summer condition of the stream may also be a series of disconnected pools, some intra-gravel flow is usually present as it was in August 1978. Both the photos and paragraph 3 on page 43 indicate that fish are exposed to high water temperatures in these beaver ponds and disconnected pools. No actual temperatures were provided. The data from Aquatic Ecology Associates indicates that while the waters of Turkey Creek and its tributaries do warm rapidly in the spring, no summer water temperatures over 23.1° C were recorded. The shade provided by the dense riparian vegetation may account, in part, for these relatively low water temperatures. The blocking of the mouth of the creek by sandbars is a common phenomenon on most of the small to medium sized tributaries along this section of the lake and, in many cases, aids in retaining greater depths of water in the lower stream reaches.

Page 33, paragraph 7: The sampling along the middle reach of the stream appeared to have neglected the large pool immediately north of the B&LE tracks. If this is true, the game species would probably be under-represented in the samples from this reach.

Page 41: AQUATIC MANAGEMENT proposals suggest USS is prepared to undertake mitigation measures in Pennsylvania or in Ohio. The proposed 1700-meter culvert would adversely affect aquatic resources on both sides of the state line. Therefore, mitigation would be required in both areas if the project is authorized and constructed.

Item (4) involves boating access to the eastern break-water of Conneaut Harbor and to the mouth of Turkey Creek. Hunter and fishermen access to these areas via Lake Road also could be assured if plant security fencing were erected south rather than north of the road. The Service initially made this suggestion in its comments on the Corps' DEIS. USS has not publicly responded to it. Access might also be assured by maintaining a road immediately west of the proposed plant fence.

Item (2) It may not be possible to decrease summer temperatures in Turkey Creek through flow augmentation as the water temperatures at the proposed water intake depth in Lake Erie are higher than those in the creek during summer months.

Page 42: The second paragraph of the DISCUSSION again expresses the notion that water quality in Turkey Creek would be adversely affected if the stream remains uncovered during construction and operation of a steel plant. We do not believe that preservation of water quality in the existing natural channel would be an unsurmountable problem/or major justification for culverting about 1½ miles of the stream.

Page 43: The third complete paragraph is misleading. Salmonid habitat in upper Turkey Creek could be enhanced by constructing stream improvement structures within the reach between Rudd and State Line Roads (i.e., within USS's proposed "greenbelt"). It would be unnecessary -- indeed undesirable -- to modify the beaver ponds east of Rudd Road, especially when Turkey Creek flow downstream (west) from Rudd Road would be augmented with water pumped from Lake Erie.

COMMENTS ON PROPOSED "GREENBELT PRESERVATION" ALTERNATIVE

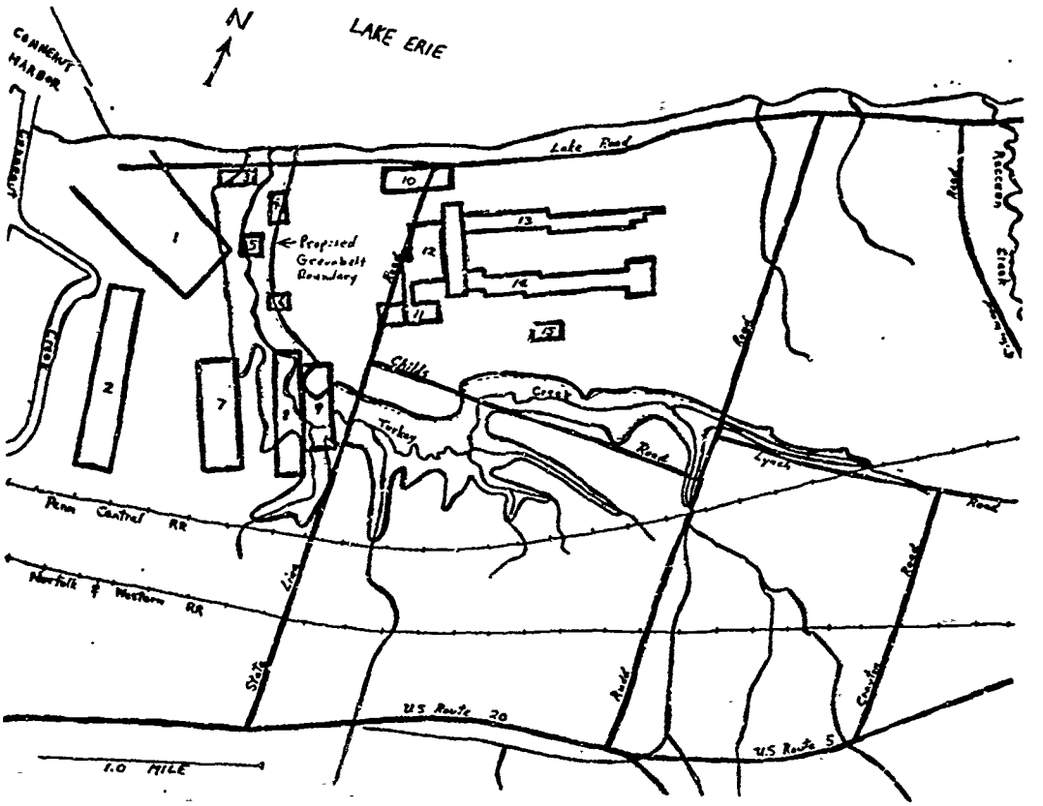
The U.S. Fish and Wildlife Service has been and will continue seeking the maintenance of a greenbelt (approximately 390 acres) along Turkey Creek and its tributaries from Lake Erie to the Penn Central (Conrail) railroad tracks. From the lake to a point approximately 0.75 miles upstream, the greenbelt would include the streambed and riparian land on both sides of the creek approximately up to the 630' contour. Upstream from that point, the greenbelt would extend laterally from the streambed approximately to the 640' contour (see attached map).

The only response to the proposal (paragraph 6.7 and 6.8 of DEIS) has dealt with the displacement of the entire steelmaking complex about one-half mile eastward. Some consideration should be given to alternative plant design incorporating the rearrangement of facilities in relation to one another. A possible design could include for example:

1) Oil storage relocated 150 meters west
2) Sinter plant relocated 200 meters east
3) Lime plant relocated 200 meters east
4) Powerhouse relocated 100 meters east
5) Coal blending relocated 150 meters west and parallel to coal storage area rather than parallel to W1200 grid line
6) Coke ovens could be oriented on an east-west axis and centered at W0950, S1250
7) Coke oven gas cleaning could be centered at W1100, S1000

Reference has been made to the fact that the integrity of the "greenbelt" and the water quality of the creek could not be guaranteed. A system of covered conveyors and possibly a bridge or culverted crossing could be designed to reduce heavy particulate fallout. Of course, surface runoff from the developed portion of the plant site would have to be deflected from the greenbelt, collected in settling basins, and treated before being directed to Lake Erie.

Until such time that U.S. Steel provides a sincere and adequate review of possible plant design alterations to accommodate the "greenbelt," we must continue to view the preservation of the Turkey Creek "greenbelt" as both desirable and feasible.



Key to numbered areas outlined in red on attached sketch

1. Raw material storage
2. Coal storage
3. Oil storage
4. Sinter plant
5. Lime plant
6. Powerhouse
7. Coal blending
8. Coke ovens
9. Coke oven by-products plant
10. Water treatment
11. Blast furnace
12. Steel casting
13. Strip mill
14. Plate mill
15. Maintenance shops

ODNR

Ohio Department of Natural Resources

OFFICE OF OUTDOOR RECREATION SERVICES
Fountain Square · Columbus, Ohio 43224 · (614) 466-4974

February 15, 1979

Colonel Daniel D. Ludwig
District Engineer
U.S. Department of the Army
Buffalo District, Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

RE: Fish and Wildlife Management Plan, U.S. Steel Corporation Proposed Lakefront Plant, Conneaut, Ohio

Dear Colonel Ludwig:

The above referenced plan has been reviewed within the Department. The plan serves to demonstrate a continuing concern for sensible development minimizing long-term ecological impacts. The following specific comments are submitted for your consideration.

Terrestrial Resources and Management Recommendations

1. Upland Species, Deer, Grouse, Woodcock, Hunting Opportunity

   a. In order of importance to wildlife management concerns are: (a) migrant woodcock, (b) hunting opportunities (10 percent of deer harvest in Ashtabula County), (c) resident woodcock, and (d) others. While the majority of migrant woodcock nesting habitat is certainly in Pennsylvania now, its fate may well have a lot to do with future hunting success in Ashtabula and Trumbull counties. If its removal were to change migration routes as has been suggested, odds are surely high that movement would be to the east rather than westward. In this, Ohio can only be the loser. In this light, every effort should be made to have as much acreage in Ohio as possible under woodcock management. The amount shown on Map 3 is fairly representative of our proportion of existing habitat, but any increases in Ohio or near the state line would be beneficial.

   b. The area selected for management as woodcock habitat appears well suited for manipulation, as disturbance is prevelant over much of the site. However, as stated on page 30, "To

benefit the widest possible range of animal life, it is desirable to retain a good diversity of ecotypes." Therefore, upland and swamp forest should not be considered as sites for environmental manipulation toward the establishment of woodcock habitat. Within Proposal 1 is discussion of manipulation of swamp and red maple ecotypes to achieve greater diversity of wildlife habitat. This may be desirable in a wildlife management area; however, the discussion provided fails to adequately address the expected success rate in establishing species such as swamp white oak, pin oak, American beech and eastern hemlock, or criteria for site selection. The four species mentioned are native trees currently or formerly occupying the area, which from a natural areas point of view is highly desirable. Nevertheless, success in reforesting patch-cut tracts will be dependent upon the edaphic and microclimatic characteristics of the selected sites. Therefore, care must be exercised in matching species to sites which will provide the greatest opportunity for successful reforestation. Additionally, care must be taken to minimize the loss of important, currently established swamp and red maple ecotypes.

   c. There is no mitigative public hunting (or even fishing) land access in Ohio proposed in the document.

   d. A very important point has been made by the Pennsylvania Game Commission. This involves the expected response of a deer herd to any type of management for woodcock/grouse and the attendant problems on land closed to hunting.

      Especially, any mitigative management within the plant fence should be avoided like the plague unless public hunting is to be allowed. We surely don't need another fenced-in deer herd problem (even with hunting).

      It also should be pointed out that Ohio land (inside or outside) the fence can be subject to municipal regulations prohibiting discharge of weapons at any time.

      In the present document under "Wildlife Resources and Terrestrial Management," pages 16-31, there is no discussion of impacts to deer or any evaluation of potential deer herd response to future terrestrial management activities.

2. Migratory Waterfowl and Wading/Shore Birds: There is no discussion of concerns from previous comments on effects on the above species from the thermal discharge. More importantly, there are no comments on the contents or temperatures of proposed waste storage lagoons and if these lagoons can be expected to attract migratory birds to hazardous conditions by reason of either providing unseasonable open water or dangerous bottom sediments during drawdowns.

Aquatic Resources and Management Recommendations

1. Primary Impact Area, Turkey Creek: Under the recommended plan the optimum situation would be to adopt the greenbelt concept for Turkey Creek with guaranteed public access (for fishing) to the Turkey Creek beach and lower river salmonid fishery. With all aspects considered, a good - possibly nearly equal salmonid fishery can be sustained within the recommended aquatic management plan. Precedent has already been established for attracting salmonids to any substantial flow that enters Lake Erie, either natural or man-made. The essential elements are continuous flow of relatively clean water at ambient temperature. It is believed that the salmonid run in Turkey Creek can be sustained under the recommended management plan presented on page 71 as long as the following conditions are met:

   a. The culvert encroaches upon the lake no closer than 1500 feet.

   b. Only water falling on and/or over naturally vegetated ground, or water pumped from oxygenated depth of Lake Erie flow through the culvert. Raw materials, storage areas, parking lots, and roofs must not be drained into Turkey Creek, but rather directed toward areas for processing with other plant effluent. Augmentation of stream flow with oxygenated water pumped from Lake Erie will be helpful in attracting salmonids to Turkey Creek and is considered a desirable activity.

   c. Construction of a small breakwall at the mouth of Turkey Creek to reduce problems with the drift barrier. The wall would be maintained by U.S. Steel.

   d. Free and easy access to the mouth of Turkey Creek by ODW fish hauling trucks and field personnel.

   e. Free and easy land-route public access to the mouth of Turkey Creek for the purpose of fishing. The security fence can be constructed south of Lake Road. Problems with liability can be eliminated through an access agreement which covers U.S. Steel under the provisions of the Ohio Revised Code, Sections 1533.18 and 181.

2. Regarding the Discussion of Upper Turkey Creek Habitat on Page 43: The potential benefits accruing from the conversion of Upper Turkey Creek to salmonid habitat do not appear significant enough to warrant the destruction or displacement of beaver, certain warm-water fishes, rooted aquatics, benthic organisms or plankton, currently thriving in this environment. Additionally, the potential for success in this venture is sufficiently low that implementation of this plan could well result in the substitution of a non-productive artificial environment where formerly, a productive natural low-flow stream

ecosystem contributed to overall habitat diversity. While construction of the culvert will unfortunately result in elimination of 2300 meters of natural stream, the culvert should add a measure of protection to the lower course of the stream. The ultimate goal of constructing the culvert without upstream modification should be the maintenance of natural upstream habitat and the management of the lower stream course as a high quality salmonid stocking and nursery area.

We appreciate the opportunity to provide these comments. If you have any questions please contact the Environmental Review Section of this Office

Sincerely,

Roger D. Hubbell, Assistant Chief
Office of Outdoor Recreation Services

RDH:sjd

cc: Ralph Bernhagen
Gene Wright, OEPA

Colonel Daniel L. Ludwig
Corps of Engineers

SUBJECT: United States Steel Fish and Wildlife Plan.

The Fish and Wildlife management plan for United States Steel Corporation's proposed lakefront plan that was submitted on January 9, was very disappointing due to a number of the comments and inquiries that were addressed at the meeting held on October 16, 1978, regarding Turkey Creek, did not appear to be answered in this most recent document.

For example, Mr. Allardyce (U. S. FWS) stated that "Turkey Creek has high fish diversity (40 species)" and the impact of Turkey Creek in production of forage and game fish species has not been addressed.

The proposed culvert would alter the food chain and affect the input of drift organisms into the lower part of Turkey Creek.

Northern pike and muckeral use the lower portion of Turkey Creek as a feeding area.

Small trout would be vulnerable to predation and the area may be unsuitable as a steelhead nursery. The stream is used by small mouth and large mouth bass as a nursery area.

Mr. Lakes (ODNR) mentioned that "if lake water were pumped into Turkey Creek, it could introduce foreign parasites and disease organisms into the watershed."

Mr. Solvik (U. S. EPA) mentioned another major concern - that "Conneaut Creek water quality must not be degraded as a consequence of secondary development."

A great concern is that dust and water run-off from coal piles, iron ore piles, and other raw or toxic materials must not be flushed into Conneaut Creek.

I would agree with Mr. Jannaka (Ohio EPA) - that a greenbelt along the Lake Erie Shoreline is needed.

United States Steel Fish and Wildlife Plan - Page 2.

Turkey Creek is, of course, one of the two (2) important cold water streams in this region. In fact, it is a natural stream that has been an important spawning ground for many different types of fish and other insect and wildlife.

Because of this, it would be totally unacceptable to the environment of this region and to the public, who use the near off-shore waters for fishing, if this stream were no longer maintained as a viable spawning ground throughout its course.

Judging from the document, it appears that United States Steel recognizes the value of this habitat. Therefore, it would be unacceptable to maintain only the lower most portion of this stream as an open stream for fish.

Regarding the adaptation to travel up stream via a culvert mechanism, it is very difficult to be convinced that the fish would be able to negotiate a 5,600 foot culvert. This would be too long to insure the following:

1. Swimability
2. Adequate resting places

Pumping Lake Erie water would add foreign parasites and disease organisms, destroy valuable spawning areas plus voiding over a mile of creek area of valuable sunlight.

As a result, it could no longer be called a creek for it would then be similar to a glorified storm sewer. The probable results would be the same as filling in the creek.

The uncertainty of a culvert mechanism, which would lead to the destruction of the natural state, is not the answer to this very difficult matter.

I would like to, again, offer another alternative to this complex problem confronting United States Steel.

It is clear, from the DEIS, that the lakefront plan would only require 1,766 acres. It is also clear that, from the DEIS and other documents available to the public, the United States Steel Corporation controls 6,000 or more acres in this area. It is, therefore, reasonable to ask that this steel corporation provide plans which engineer its plant facilities in such a way as to leave a zone of natural habitat on either side of this creek.

It should be noted that the applicant has expressed some concern that, if the stream were not culverted, the water quality would be adversely affected by iron ore and raw materials blown by winds or washed into the stream. It would provide for a water shed for collection of dust, iron ore, and other raw material particles.

The answer to this particular problem is not a culvert stream. Instead, the machinery which generates such dust and particles should be covered. This would also aid in keeping our air environment much cleaner and would probably help to keep the plant environment much cleaner. Furthermore, if this concern of U. S. Steel is dust, ore, and particles, we should be much more concerned about the amount of dust, ore, and particles that would fall into Conneaut Creek. Because of its much larger surface area and the fact that a Conneaut Creek culvert is not possible, the potential contamination would be much more than Turkey Creek.

Since a Conneaut Creek culvert is not possible, the answer to the problem, of both creeks, is to be sure that the machinery producing such dust is adequately sheltered or covered.

This might seem like a complex way to solve the problem, but it must be recognized that natural processes, including natural streams, are complex works of nature. They can not be duplicated by man. It must be realized that such things are important to our biological life in many ways, that are not always completely understood.

While there is some uncertainty regarding the feasibility of a culvert as a transport mechanism for fish, it must be noted that there are some experts such as Dr. Ray White, Professor of Fishery Biology at Michigan State University, in East Lansing, who doubts that a culvert of this length would be swimable. In addition, there can be no question, among any of the experts, that the one (1) mile length of culvert would, in itself, destroy one of the most valuable portions of the creek for spawning and other purposes.

Regarding the most recent document concerning the 150 man hours utilization of these waters at Turkey Creek, it is not too clear what mechanisms were used to compile this figure. In fact, the degree of underestimation has created some concern on other data in this report.

Since Turkey Creek has become an important issue, many citizens from the community want it to remain open.

An effort was made to determine usage of the creek and the numbers compiled were very different from the 150 man hours indicated in this most recent document. In addition to this, it can be noted that at the meetings of February 4, and 3, 1976, between the representatives of the Ohio Division of Wildlife, the Bessemer and Lake Erie Railroad, and the Pittsburgh and Conneaut Dock Company, the Division of Wildlife had expressed interest in maintaining public access to these fisheries. Because of the importance of these fisheries, the Division of Wildlife had opposed

the closing of Woodworth, Thompson, and State Line Roads.

Of course, if all three roads are closed, they will be of little or no use, but the point is that the public has had continued access to these areas long before United States Steel was in the area. It would seem that, as a good neighbor, this access should be maintained.

Apart from the access from the mouth of the Creek, the influence of what happens within this Creek will be a significant impact upon the quality and quantity of fish in the near off-shore waters. These waters have been heavily utilized and will continue to be heavily utilized by fishermen from Conneaut and neighboring areas.

The Ohio and Federal EPA must take every precaution to insure that the Conneaut Creek waters do not deteriorate any further. They must insure that the fishing in and around the Conneaut, Ohio area, especially the sport fishing which has been a very significant part of the recreation industry in this community, is not degraded.

Respectfully submitted,

Paul Williams, Mayor
The City of Conneaut, Ohio

APPENDIX F

Minutes of the Federal Regional Council
Meeting of 13 September 1973, and the
Applicant's Response to the Issues and
Concerns Raised

Best Available Copy

[illegible] FEDERAL REGIONAL COUNCIL

Curtis Building, Room 417
6th and Walnut Streets
Philadelphia, Pennsylvania 19106
(215) 597-9114

[illegible] ber 12, 1978

[illegible] District

[illegible]

[illegible]opy of the final report of a meeting sponsored [illegible] III and Region V Federal Regional Councils and [illegible] Pittsburgh on September 13, 1978.

[illegible]eeting focused on all population issues relative to the [illegible]ed U.S. Steel Lakefront Plant. The participants narrowed [illegible] earlier criticisms of the population projections in the [illegible] U.S. to a single set, and made recommendations for resolving the outstanding issues.

The participants have requested that the Corps ask the applicant to make the recommended modifications or to otherwise respond to the points contained in this report.

When you have received the applicant's response, please forward a copy to this office so that we can distribute it to the participants and secure a final resolution of these issues which can be incorporated into the final Environmental Impact Statement.

Sincerely,

John J. Kane
Staff Director

Attachment

MEMBERS: Department of Housing and Urban Development; Department of Health, Education and Welfare; Environmental Protection Agency; Department of Agriculture; Department of Commerce, Department of Labor, Department of Transportation; Community Services Administration; Department of Energy

[illegible]

Background

During the comment period on the Draft Environmental Impact Statement (D.E.I.S.) ending September 8, 1978, various local, state and Federal agencies criticized the projected population impacts of the proposed Lakefront Plant.

The Army Corps of Engineers perceived a need to have the critics attempt to resolve these issues, or to narrow them to a single set of criticisms in order to facilitate their resolution. Simultaneously, the Environmental Protection Agency indicated a need to resolve the population questions before formulating a final position on secondary environmental impacts, such as the need for additional sewer and water infrastructure.

The Corps and E.P.A., therefore, discussed the matter with the Region III Federal Regional Council, and asked the F.R.C. to convene a meeting of the critics of the population projections. The F.R.C. agreed to conduct a meeting to seek to develop, by consensus, a single set of criticisms. The Corps agreed to submit the recommended actions to the applicant, U.S. Steel Corporation, for response. If the applicant's response satisfies the critics, then the population issues will have been resolved. If the critics are not satisfied with the applicant's response, then a meeting between the critics and the applicant may be convened in order to resolve the remaining population issues.

Pittsburgh Meeting, September 13, 1978

The Region III F.R.C., on behalf of itself and the Region V F.R.C., called a meeting on September 13, 1978 at the Governor's Office in Pittsburgh. Representatives of all governmental or quasi-public agencies which had submitted substantive criticisms or which had performed detailed analysis of the population projections in the D.E.I.S. were invited to participate.

The meeting was chaired by John J. Kane, Staff Director of the Region III F.R.C., assisted by Alfred Judd. The Corps of Engineers was represented by Paul Leuchner and Greg Keppel.

Other participants in the meeting were: B. Berry of Harvard University (consultant to the Corps); W. Neary of H.E.W., Region III; D. Clark of H.U.D., Region V; R. Suflas of E.P.A., Region III; R. Benko, R. Lembke, and T. Brennan of the Pennsylvania Office of State Planning and Development; G. Beckman of the Northwest Pennsylvania Futures Committee; W. DeCicco of the Eastgate Development and Transportation Agency; K. Boorman of the Ashtabula County Planning Commission; E. Edinger of the Crawford County Planning Commission; C. Cezano of Northeast Ohio Urban Systems; and W. Hatzer of the City of Conneaut. M. Gill of the Manufacturer's Association of Erie was unable to attend, but submitted a written document produced by the Association's consultant, Battelle Institute.

Recommended Actions

The actions recommended by the participants of the meeting follow. Conclusions and positions do not necessarily reflect the views of the chair (Region III FRC) or of the Corps of Engineers. Unless otherwise specifically stated, the actions recommended below represent the consensus of the discussion participants. The discussion touched on all areas of the population issues, and the recommended actions only focus on a few of these issues. In the case of issues not specifically treated below, the consensus of the participants was either (1) that material presented in the D.E.I.S. is adequate and acceptable, or (2) that any shortcomings are too inconsequential to require further attention.

Each specific action recommended by the discussion participants follows:

1. Construction Phase (1981 Peak Year)

The participants agree that the projections presented in the . re, by definition, the best case with respect to workers and pop migrating into the impact area. In other words, the D.E.I.S. pr the fewest possible movers for the construction phase because it mes hiring all construction workers available within potential commuti distance. The participants agree that the projection of movers presented in the D.E.I.S. is an unattainable ideal, and that a second, prudent alternative should also be presented. Therefore, the participants agree that an alternative should be developed and presented together with the existing projection in the final E.I.S.

The participants agree that the second, prudent alternative should be calculated as follows. Instead of assuming 100% hiring of available construction workers in each trade as needed, first within a 100-mile radius, second within a 100 to 400-mile radius, and finally beyond a 400-mile radius, the alternative should assume the ability to hire only 90% of the available workers in each trade within a 100-mile radius and only 65% beyond a 100-mile radius.

Additionally, the participants do not necessarily believe that 100% of workers from a 100 to 400-mile radius will be weeklies; some may become movers. Therefore, the participants agree that this alternative should assume that 2/3 of workers hired from the 100 to 400-mile zone will be weeklies and that 1/3 will become movers. The participants believe that these alternative calculations are justified by past experience with large scale construction projects, such as nuclear power plants.

An example of the calculation of the alternative follows for millwrights (900 is the maximum number needed in the 1981 construction peak-year):

	Available Within 100 Miles (Commuters)	Available Within 100 to 400 Miles (Weeklies)	Additional Workers Need (Movers)
Alternative 1: Draft D.E.I.S.	100	500	300
Alternative 2: Recommended Calculation	100 x 90% =	500 x 65% = 325 of which 2/3 are weeklies = 217 (1/3 are movers = 108) ⟶	900 - (90 + 325) = 485 +108 = 593
	Commuters	Weeklies	Movers
Alternative 2: Recommended Result	90	217	593

The effect of this alternative will be to reduce the projected number of weekly workers (and decreasing the need for appropriate temporary accommodations) while increasing the projected number of movers (and increasing the need for suitable permanent housing). The participants believe this procedure is necessary to identify a scenario which may reasonably be expected to occur in the near term. The participants urge local planners to thoroughly prepare for these construction-phase impacts, because the construction-phase growth will have significant and continuing impacts in the long term.

2. Indirect and Induced Employment in 1990 Operations Phase

The participants generally agree with the projection of indirect employment contained in the D.E.I.S. Because of the nature of the proposed mill, the number of indirect jobs to be created in the impact area is expected to be relatively low within the time period ending in 1990.

The participants believe the projection of induced employment in the D.E.I.S. presents a best possible case (lowest possible number of induced jobs created), and that an alternative is required.

The projection of induced employment in the D.E.I.S. assumes substantial excess capacity in the service sectors within the impact area. The participants cannot justify using this best case (least impact) assumption without presenting an alternative.

To calculate an alternative projection of induced employment, the participants recommend the following procedure and assumptions.

If the ratio of basic to non-basic jobs in the impact area will remain about the same before and after construction of the proposed mill, then the projection of induced employment in 1990 should be calculated by holding that ratio constant. The participants believe that this assumption is justified by past experience in the impact area and elsewhere.

Thus, the alternative projection of induced employment should be calculated by determining the present ratio of basic (direct) jobs to non-basic (indirect plus induced) jobs in three-county impact area, and then applying that ratio to basic (direct plus those indirect jobs actually part of the operation of the mill) jobs projected to be created by the proposed mill.

For example, if the current ratio is 45:55 (basic : non-basic) and basic mill jobs in 1990 are estimated to be (8,450 direct plus 225 indirect actually part of mill operations =) 8,675, then the alternative projection of non-basic employment would be 10,603. The alternative projection of induced employment would therefore be (10,603 minus 1,075 indirect jobs not actually part of mill operations =) 9,528.

The participants believe that such a calculation will yield a prudent, reasonable alternative which should be presented in the final E.I.S. together with the projection in the D.E.I.S.

3. In-Migration Associated With Operations Phase by 1990

The projections of in-migration associated with the operations phase by 1990 were calculated in the D.E.I.S. by making assumptions about the share of each job category which would be filled by original residents of the impact area. Specifically, the D.E.I.S. assumes that 60% of the 8,450 jobs at the proposed mill will be filled by original residents, and that 100% of the indirect and induced jobs will be filled by original residents.

The consensus of the participants is that the distinction among these three categories (direct, indirect and induced) is, for this purpose, artificial and unsound. Moreover, the participants find no adequate justification for the 60%-100%-100% assumption used to calculate the original resident share of new employment. (A 100%-100%-100% share would, by definition, be the "best case" with no in-migration impact).

The action recommended by the majority of the participants is to ask the applicant to drop the distinction for original resident shares for each separate employment category and to further research past experience to document what share of all new jobs is likely to be filled by original residents and what share is likely to be filled by in-migrants. On the basis of this review of actual experience, the present conclusion in the D.E.I.S. should either be documented or modified. The new result should be presented under two conditions: (1) using the estimate of induced employment in the D.E.I.S., and (2) using the estimate of induced employment derived from the calculation recommended in #2 above.

Two participants, C. Beckman and Z. Ediger, disagree with the majority on this recommendation and wish their dissent to be noted in the record. Messrs. Beckman and Ediger believe that each new (direct, indirect or induced) job created will cause in-migration. They do not accept the assumptions that the unemployment rate will decrease and that the labor force participation rate will increase are warranted to a significant degree, so that new job opportunities will cause significant in-migration and population increases. The minority believes that the final E.I.S. should present a worst case by assuming that all new employment will create some in-migration (although not necessarily a 1.1 ratio) and that the original resident concept is therefore irrelevant.

All of the participants agree that this issue is crucial in projecting the population impact of the proposed mill, and that additional empirical evidence is required in order to make informed judgments. Such additional evidence should be presented by the applicant.

The participants agree that the assumptions implicit in the D.E.I.S. that the in-migrants will have a [illegible] unemployment rate [illegible] Some persons will migrate to the impact area in an unsuccessful search for job. The applicant should further address this issue as a part of developing a reasonable projection of in-migration.

4. Baseline Population Projections

The baseline (without the proposed mill and therefore without the "impact increment") population projections in the D.E.I.S. are satisfactory, although area agencies (for example, E.P.A., Pa. D.E.R., and Ashtabula County Planning Commission) have either updated the projections since their inclusion in the D.E.I.S. or use other sources for their baseline data. The participants found no significant adverse consequences by using the baseline data in the D.E.I.S. without modification.

5. Geographical Distribution of the Impact Population

The applicant prepared a "coastal communities scenario" for the geographic distribution of the impact population. This projection, which is presented in the D.E.I.S., assumes that mill-related population growth will principally occur in the coastal communities east and west of the proposed mill site.

The participants find this distribution projection to be premature and unwarranted. An equal number of significant factors suggest that the projected distribution is unlikely as suggest that the coastal growth pattern is likely. The participants believe that the specific distribution suggested by the D.E.I.S. may in fact be the least likely to occur. The assumptions on which the coastal scenario are based are subject to serious challenge. The participants believe, for example, that the likely impact on Springfield Township will be less than projected in the D.E.I.S., and that the impact on the City of Erie will be greater).

The purpose of estimating the distribution of new population in the D.E.I.S. is to serve as a basis for evaluating secondary impacts on various communities. In an attempt to project these impacts, the D.E.I.S. is too specific. That is, attempts to estimate precise impacts in a given community are flawed because they magnify the weaknesses of unfounded assumptions.

Growth areas will be determined by three principal factors: (1) governmental policies and regulations, which have not yet been established, (2) preferences of new residents, which are not yet known, and (3) market forces, which cannot yet be predicted. For these reasons, the participants believe it is potentially misleading for the E.E.I.S. to attempt to predict geographic patterns for population growth.

The participants believe that much of the material related to this issue should be deleted in the final E.I.S. and that any remaining estimates should be qualified to distinguish between illustrations of what could happen and predictions of what will happen.

Summary

The participants recognize that predicting population impacts of a large-scale development such as the proposed mill is not an exact science, and that different analysts can reasonably disagree in preparing estimates. By presenting the alternatives recommended above, the participants believe the final E.I.S. can better inform readers and decision-makers of what the impacts could be than by adhering to the single estimate approach in the D.E.I.S.

APPLICANT'S
RESPONSE
TO
FEDERAL
REGIONAL
COUNCIL
MEETING
OF
23 September 1979

FRC

POPULATION AND REGIONAL ECONOMICS

POPULATION

A number of comments were received on the population analysis presented in the DEIS. In order to integrate the comments of the various government agencies, the Federal Regional Council, Regions III and V, sponsored a meeting on September 13, 1979. This write-up first addresses the issues raised at the FRC-sponsored meeting and then responds to the additional comments on population made during the DEIS comment period.

Comment 1:

Construction Phase (1981 Peak Year)

The participants agree that the projections presented in the D.E.I.S. are, by definition, the best case with respect to workers and population migrating into the impact area. In other words, the D.E.I.S. projects the fewest possible movers for the construction phase because it assumes hiring all construction workers available within potential commuting distance. The participants agree that the projection of movers presented in the D.E.I.S. is an unattainable ideal, and that a second, prudent alternative should also be presented. Therefore, the participants agree that an alternative should be developed and presented together with the existing projection in the final E.I.S.

The participants agree that the second, prudent alternative should be calculated as follows. Instead of assuming 100% hiring of available construction workers in each trade as needed, first within a 100-mile radius, second within a 100 to 400-mile radius, and finally beyond a 400-mile radius, the alternative should assume the ability to hire only 90% of the available workers in each trade within a 100-mile radius and only 65% beyond a 100-mile radius.

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these alternative calculations are justified by past experience with large scale construction projects, such as nuclear power plants.

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	Commuters	Weeklies	Movers
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The effect of this alternative will be to reduce the projected number of weekly workers (and decreasing the need for appropriate temporary accommodations) while increasing the projected number of movers (and increasing the need for suitable permanent housing). The participants believe this procedure is necessary to identify a scenario which may reasonably be expected to occur in the near term. The participants urge local planners to thoroughly prepare for these construction-phase impacts, because the construction-phase growth will have significant and continuing impacts in the long term.

FEC

Comment 2:

Indirect and Induced Employment in 1990 Operations Phase

The participants generally agree with the projection of indirect employment contained in the D.E.I.S. Because of the nature of the proposed mill, the number of indirect jobs to be created in the impact area is expected to be relatively low within the time period ending in 1990.

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For example, if the current ratio is 45:55 (basic:non-basic) and basic mill jobs in 1990 are estimated to be (8,450 direct plus 225 indirect actually part of mill operations =) 8,675, then the alternative projection of non-basic employment would be 10,603. The alternative projection of induced employment would therefore be (10,603 minus 1,075 indirect jobs not actually part of mill operations =) 9,528.

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FRC

Comment 3:

In-Migration Associated with Operations Phase by 1990

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All of the participants agree that this issue is crucial in projecting the population impact of the proposed mill, and that additional empirical evidence is required in order to make informed judgements. Such additional evidence should be presented by the applicant.

The participants also agree that the assumption implicit in the D.E.I.S. that the in-migrants will have a 0.0% unemployment rate is unwarranted. Some persons will migrate to the impact area in an unsuccessful search for jobs. The applicant should further address this issue as a part of developing a reasonable projection of in-migration.

FRC

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Baseline Population Projections

The baseline (without the proposed mill and therefore without the "impact increment") population projections in the D.E.I.S. are satisfactory, although some agencies (for example, E.P.A., Pa. O.S.P.D., and Ashtabula County Planning Commission) have either updated the projections since their inclusion in the D.E.I.S. or use other sources for their baseline data. The participants found no significant adverse consequences by using the baseline data in the D.E.I.S. without modification.

FRC

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Geographical Distribution of the Impact Population

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The participants find this distribution projection to be premature and unwarranted. An equal number of significant factors suggest that the projected distribution is unlikely as suggest that the coastal growth pattern is likely. The participants believe that the specific distribution suggested by the D.E.I.S. may in fact be the least likely to occur. The assumptions on which the coastal scenario are based are subject to serious challenge. The participants believe, for example, that the likely impact on Springfield Township will be less than projected in the D.E.I.S., and that the impact on the City of Erie will be greater).

The purpose of estimating the distribution of new population in the D.E.I.S. is to serve as a basis for evaluating secondary impacts on various communities. In an attempt to project these impacts, the D.E.I.S. is too specific. That is, attempts to estimate precise impacts in a given community are flawed because they magnify the weaknesses of unfounded assumptions.

Growth areas will be determined by three principal factors: (1) governmental policies and regulations, which have not yet been established, (2) preferences of new residents, which are not yet known, and (3) market forces, which cannot yet be predicted. For these reasons, the participants believe it is potentially misleading for the D.E.I.S. to attempt to predict geographic patterns for population growth.

The participants believe that much of the material related to this issue should be deleted in the final E.I.S. and that any remaining estimates should be qualified to distinguish between illustrations of what could happen and predictions of what will happen.

Response to FRC Comments:

The comments prepared by FRC request alternative estimates of in-migration and hence population impacts in the Regional Study Area. Accordingly, the first section of this response presents alternative in-migration calculations based on assumptions and data described in the comments. The second section discusses in detail the FRC assumptions and compares them to the DEIS assumptions and methodology. However, as will be shown, the DEIS presents a reasonable estimate of the most likely level of employment and population impacts

1. Construction Phase (1981 Peak Year)

The alternative calculation proposed by FRC is based on the assumption that only 90% of the workers available within 100 miles and only 65% of those available within a 100-400 mile radius of the plant site will be hired. Moreover, only two-thirds of this latter group will be weeklies; the remainder will become movers.

For the purpose of this alternative calculation, we have assumed that these conditions apply only to the five critical skill categories identified in the DEIS — millwrights, iron workers, boilermakers, electricians, and pipe fitters. There are expected to be more than enough workers available within daily commuting range in the remaining union skill categories. Moreover, the DEIS incorporates generous allowances for movers in the two administrative (non-union) categories. The results of this calculation are shown in Table 1.

As can be seen, the alternative calculation results in an increase of about 1,700 movers during the construction phase and a somewhat smaller decrease in the estimate of weeklies. Based on an average construction worker family size of 3.2 persons, construction-related new population would be about 8,600 rather than the DEIS estimate of 3,235, or 2.5% rather than 1% of the estimated baseline population in the Principal Study Area.

2. Indirect and Induced Employment

The alternative calculation proposed by FRC is based on determining the present ratio of basic to service jobs in the Regional Study Area and using this ratio to calculate induced employment created by new basic (direct and indirect) jobs.

As discussed in Further Response to FRC Comment 2, the ratio of 55:45 is based on 1974 employment in manufacturing, agriculture, mining, and

construction as the components of the basic section. The detailed survey information necessary for a more accurate definition of the basic/non-basic ratio is not available for the Regional Study Area. The results of the calculations based on this 55:45 ratio are shown in Table 2.

TABLE 2

ALTERNATIVE ESTIMATES OF OPERATIONS
PHASE EMPLOYMENT - 1990

	DEIS	FRC	Percent Difference from DEIS Alternative
Direct	8,450	8,450	-
Indirect	1,300	1,300	-
Induced	3,600	7,975	122%
Total	13,350	17,725	33%

Source: Arthur D. Little, Inc. and Mid-Atlantic Federal Region, Letter dated November 30, 1978.

As can be seen, the increase in induced employment generated by the alternative methodology results in one-third more jobs attributable to the proposed project. Corresponding increases in income would be lower because of average wage rates in non-manufacturing sectors.

3. In-migration Associated with Operations Phase

The alternative estimate proposed by FRC of in-migration is based on eliminating the distinction among direct, indirect, and induced jobs in calculating the original resident share of employment. It is suggested that past experience be researched to determine the likely original resident share of all new employment.

As noted in Further Response to FRC Comment 2, we have not found any studies that relate in-migration to total employment; existing information deals with direct jobs only. However, since it was estimated that original residents would hold 60% of the direct jobs available (i.e., after subtracting the estimated number of U.S. Steel transfers), a reasonable alternative would be to use this 60% share for all new jobs. It is also

TABLE 1

ALTERNATIVE ESTIMATES OF CONSTRUCTION
PHASE IN-MIGRATION - 1981 PEAK YEAR

	DEIS Alternative			FRC Alternative			Percent Difference from DEIS Alternative		
	Commuters	Weeklies	Movers	Commuters	Weeklies	Movers	Commuters	Weeklies	Movers
Millwrights	100	500	300	90	217	593	- 10%	- 57%	+ 90%
Ironworkers	1,100	500	50	990	217	443	- 10%	- 57%	+786%
Boilermakers	150	450	100	135	195	370	- 10%	- 57%	+270%
Electricians	600	450	130	540	195	465	- 10%	- 57%	+210%
Pipefitters	700	600	200	630	260	610	- 10%	- 57%	+205%
Laborers	1,500	-	-	1,500	-	-	-	-	-
Carpenters	1,100	-	-	1,100	-	-	-	-	-
Bricklayers	500	-	-	800	-	-	-	-	-
Operating Engineers	300	-	-	300	-	-	-	-	-
Other Crafts	500	-	-	500	-	-	-	-	-
On-site Admin. (USS)	15	25	110	15	25	110	-	-	-
On-site Admin. (subcontractors)	225	125	100	225	125	100	-	-	-
Total	7,090	2,650	1,010	6,825	1,234	2,691	- 4%	- 53%	+166%

Source: Arthur D. Little, Inc. and Mid-Atlantic Federal Regional Council, letter dated November 30, 1978.

TABLE 3
ALTERNATIVE ESTIMATES OF IN-MIGRANT EMPLOYMENT - 1990

	DEIS			FRC			Percent Difference from DEIS Alternative	
	Original Residents	In-Migrants	Total	Original Residents	In-Migrants	Total	Original Residents	In-Migrants
Case I								
DEIS Alternative								
Direct	4,175	4,275	8,450	4,175	4,275	8,450	-	-
Indirect	1,170	130	1,300	702	598	1,300	- 40%	+360%
Induced	3,570	30	3,600	2,142	1,458	3,600	- 40%	+4,760%
Total	8,915	4,435	13,350	7,019	6,331	13,350	- 21%	+ 43%
Case II								
FRC Alternative								
Direct	4,175	4,275	8,450	4,175	4,275	8,450	-	-
Indirect	1,170	130	1,300	702	598	1,300	- 40%	+360%
Induced	7,895	80	7,975	4,737	3,238	7,975	- 40%	+3,950%
Total	13,240	4,485	17,725	9,614	8,111	17,725	- 27%	+ 81%

Source: Arthur D. Little, Inc., and Mid-Atlantic Federal Regional Council, letter dated November 30, 1978.

important to note that this estimate deals with primary in-migrants (heads of households) only. Some 25% (DEIS estimate based on plant salary levels) to 50% (based on current trends) of these in-migrant families will have two wage earners. The results of these calculations for both employment estimates in Table 2 are shown in Table 3. (Case I shows the 13,350 employment estimate and Case II the 17,725 employment estimate.)

As can be seen, this alternative calculation increases the estimate of in-migrants by about 40% (based on the DEIS employment projection), which is not too different from the upper end of the range discussed in Chapter 4 of the DEIS. The alternative employment estimate would result in about 8,100 in-migrant families.

Assuming the family size derived in the DEIS, the population impacts of these levels of in-migration would be about 22,500 persons in the first case and 28,900 in the second, or 6% and 8%, respectively, of the projected baseline population in the Principal Study Area.

Further Response to FRC Comment 1:

The comment states that the construction-related population impact presented in the DEIS is the best case (lowest level of impact) for the study area, in part because it assumes hiring all construction workers available within potential commuting distance. The comment then presents an alternative scenario based on hiring 90% of the available workers within 100 miles, 65% of those within 100-400 miles (of whom one-third would be movers), and the remainder outside the 400-mile radius.

In projecting the impact of any project it is impossible to say for certain what will actually happen when the project goes forward. There are a range of scenarios, some of which reflect more realistically than others what is likely to occur. In the DEIS a scenario is presented which for a number of reasons seems to be a most likely scenario. This should not be interpreted as meaning that no other scenario could occur, but that the one presented in the DEIS is viewed as a reasonable projection.

The FRC alternative, which would generate a total of 2,700 in-migrant construction families compared to the DEIS estimate of about 1000, probably overestimates the number of construction workers who will move into the study area. When considered in the context of common practice in the construction industry, the expected length of employment for in-migrant workers, and the ability of local communities to accommodate new population at the beginning of the projection period, the DEIS estimate appears more reasonable. The following discussion demonstrates the difference between the DEIS scenario and the FRC alternative scenario.

First, it should be made clear that the estimates of construction workers available in each geographic area presented in the DEIS (Working Paper II) represent workers available for the proposed plant after consideration of current (1977) employment of union members, expected construction industry trends during the first step of plant construction, and labor-competitive projects. Early in the analysis it was determined that the most reasonable way to examine worker availability was on a craft-by-craft basis. Local union officials were used as original sources and supplied the required information. In several cases, after additional field inquiries by Arthur D. Little, Inc. more conservative (i.e., lower) projections of available labor in individual skill categories were made, allowing for additional employment on other construction projects during the years between 1977, when the survey was made, 1979 when the project is scheduled to begin, and 1981 when the peak labor requirements will generally occur. These modified labor availability estimates were then re-examined by managerial personnel experienced in construction in the geographic area of the proposed Lakefront project.

In-depth discussions with union officials in the area and review of studies and reports concerning large-scale construction projects elsewhere in the United States all indicate that construction workers have historically accepted relatively long commutes as a part of their work. Past practice supports this view.

Of the 16 craft categories required for the proposed project, 11 (laborers, carpenters, bricklayers, operating engineers, sheet metal workers, teamsters, painters, plasterers, plumbers, pile drivers, and insulators) were determined to have significantly more workers available within commuting distance than would be needed. (See Tables 9 and 10, pages 2-55 and 2-56, of Working Paper II - Construction). Thus, even if the commuting range were less and/or the schedules of other known projects conflicted with that of the Lakefront plant and/or the proposed project was only able to attract 90% of the workers available within commuting distance, it is still reasonable to expect that requirements in these 11 crafts could be met, particularly in view of expanded training programs planned by unions, voluntary changes in job categories, etc. Accordingly, it is believed that no in-migrants (weeklies or movers) would be required for these 11 categories.

For the two categories of administrative personnel, large allowances for in-migrants were made in the original estimates -- 90% for U.S. Steel personnel and 50% for other administrative categories. The latter included primarily professional personnel employed by contractors and subcontractors. Resident workers are expected to fill clerical, secretarial, maintenance, and security positions. It is believed that a more than adequate pool of such workers exists within short commuting distance.

Accordingly, a higher in-migrant estimate for 11 of the 16 craft categories or for administrative workers is not believed to be justified. However, in five worker categories (pipefitters, electricians, boilermakers, iron workers, and millwrights), it was noted that difficulties in manpower procurement could be expected. (Although if the schedules of other planned projects did not conflict with the Lakefront plant construction, manpower procurement problems even in the "short" categories would be alleviated.)

Peak manpower requirements for the five critical skill categories would be 5,950 workers, with 2,650 estimated to be available within commuting distance. The DEIS projection is that 2,500 of the remaining 3,300 jobs would be filled by weeklies, with 800 jobs taken by movers. The FRC alternative would divide these 5,950 jobs among 2,385 workers within commuting distance, 1,084 weeklies, and 2,481 movers. The craft breakdowns for these distributions are shown in Table 4.

The most obvious difference between the DEIS distribution and the FRC alternative is that the FRC alternative assumes that movers would fill more than twice as many jobs as weeklies. This might be considered a prudent, worst case (highest impact) alternative. However, an examination of this alternative in light of the specific characteristics of the U.S. Steel project and the study area makes it appear unlikely.

As noted above, the estimates of labor availability within each geographic area are believed to be quite conservative and to represent labor available specifically for the Lakefront project after considering other planned construction activity. A less conservative (and well within reasonable limits) approach would be to assume that all labor requirements which could not be filled by commuters could be filled from the 100-400 mile area (from which weeklies would come). As can be seen in Figure 4 of Working Paper II, a 400-mile driving radius includes all of Ohio and Pennsylvania as well as substantial portions of New York, New Jersey, Maryland, Virginia, West Virginia, Kentucky, Indiana, and Michigan. In 1976 this area had about 1 million persons employed in contract construction, more than one-fourth of all construction employment in the United States. A logical best case (least impact) assumption would be that all construction labor required for the proposed project could be drawn from this area, and that no movers (other than U.S. Steel administrative personnel) would be needed.

In this context, it should become clear that the DEIS is based on a reasonable conservative approach to estimating construction worker availability. Assuming that only 65% of the estimated available workers in the 100-400 mile radius area would actually be available for the proposed project, as suggested by FRC, does not appear to be justified. This becomes particularly evident when it is understood that the difference between the DEIS scenario and FRC estimates (that is, the DEIS number of weeklies and 65% of that number) is a maximum of 200 workers in each skill category and that the potential labor market comprises eight to ten states.

TABLE 4

ALTERNATIVE DISTRIBUTIONS OF PEAK MANPOWER REQUIREMENTS IN CRITICAL SKILL CATEGORIES

	Maximum Required	DEIS			FRC Alternative		
		Within 1 0 Miles	Weeklies	Movers	Within 100 Miles	Weeklies	Movers
Millwrights	900	100	300	300	90	217	593
Iron Workers	1,650	1,100	500	50	990	217	443
Boilermakers	700	150	450	100	135	195	370
Electricians	1,200	600	450	150	540	195	465
Pipefitters	1,500	700	600	200	630	260	610
Total	5,950	2,650	2,500	800	2,385	1,084	2,481

Source: Arthur D. Little, Inc. and Mid-Atlantic Federal Regional Council, letter dated October 12, 1978.

The second part of the FRC alternative scenario pertaining to the 100-400 mile driving radius has to do with the share of these workers who would be movers rather than weeklies. Working Paper II of the DEIS presents a summary of the information gathered on construction industry practices from relevant literature and interviews with union personnel, contractors, and others. Generally, because of the temporary nature of any construction project, a worker will choose not to uproot his family, but rather commute on a daily or weekly basis whenever possible. (It should be remembered that the workers who are the subject of this analysis are union members with specialized skills. They would not be likely to find housing or remodeling construction work an attractive alternative to work in their specialized area which would require commuting long distances because of the significantly higher wages paid to skilled union workers.) It was therefore assumed that most workers would prefer being weeklies to moving.

The FRC alternative suggests that one-third of the workers drawn from the 100-400 mile radius would be movers rather than weeklies. Based on the central assumption of the DEIS allocation methodology — that the likelihood of moving would increase with distance from the site — the FRC alternative is equivalent to reducing the geographic area for weeklies to a 100-300 mile radius from the site. (As noted in Working Paper II, there would be some exceptions to this assumption, but the distance-based allocation methodology is believed to be reasonable.)

If the maximum driving distance for weeklies was 300 rather than 400 miles, there would not be a significant difference in the number of movers. Typical union hiring practices, as discussed in Working Paper II, can be described in terms of a series of concentric circles spreading out from the project site. In other words, a member of a union local based fairly close to the site would generally be hired before a member of a more distant union.

There are two significant sources of construction workers at the innermost edge of the 100-300 (or 400) mile radius — Buffalo and Pittsburgh, both about 125 driving miles. (In fact, workers from these cities might be daily commuters rather than weeklies, depending on road conditions and weather, particularly if car pools are used to reduce driving requirements and expenses.) A 200-mile driving radius would include such cities as Toledo and Columbus, Ohio, and Johnstown and Altoona, Pennsylvania. A 300-mile driving radius would add Syracuse, New York; Harrisburg, Pennsylvania; Charleston, West Virginia; Cincinnati, Ohio; Fort Wayne, Indiana; and Detroit, Michigan to the potential labor market. It is highly likely that most of the 2,500 weeklies projected in the DEIS could be found in this smaller area. Therefore, the assumption that one-third of the workers from the 100-400 mile radius would be movers would likely overstate the number of possible movers.

As important, if not more important, than the geographic-based arguments above is the need to consider duration of employment in estimating the number of in-migrants likely to move to the study area. Throughout the DEIS, construction-related impacts are discussed for 1981 (the peak year) to illustrate the maximum likely effects. However, to apply the FRC alternative calculation to the peak requirement for each craft produces a substantial overestimate of movers because this peak requirement is expected to last for no more than six months of the eight-year construction period. This approach implies a population projection based on the likelihood that a worker would move his family to take advantage of a short-term temporary job.

Figure 2 in Working Paper II shows manpower requirements for the proposed project. There is expected to be a sharp peak in employment in the second quarter of 1981 and a similar, but smaller peak five years later. However, for about two-thirds of the time that construction workers would actually be on the site, total manpower requirement would be less than half of the 1981 peak requirement. Manpower requirements for each individual craft are generally similar to the overall project time phasing.

Before a construction worker decides to move to the study area, he will make some estimate of the likely duration of employment. He would want to weight the benefits of employment at the plant (in terms of long-term employment on a single project) against the financial and personal costs of moving and uprooting his family. The longer the plant would provide employment, the easier it would be to justify the cost and inconvenience of a move. On the other hand, a job which might end in 6-12 months would be much less attractive, particularly if the family would have to move again at the end of that time.

Under the FRC alternative the proposed project would be able to absorb all of the movers for only four quarters of Step I and there would be a significant oversupply of construction workers during all of Step II.

In summary, it is believed that when the FRC alternative approach is examined in detail in terms of both the geographic and time-phasing characteristics of the proposed project, the resulting projection of movers is high. As shown above, the DEIS estimate is a reasonable level of construction-related in-migration.

Further Response to FRC Comment 2:

The FRC comment states that the DEIS presents a best possible (least impact) case for induced employment, in part because it assumes substantial existing excess capacity in the service sectors in the study area. (The comment accepts the estimate in the DEIS of indirect employment.) The comment then suggests that an alternative projection of induced employment should be calculated by determining the current ratio of basic (export) to non-basic (support) employment in the area and applying this economic base multiplier approach to plant employment to estimate induced employment.

Although it is impossible to be certain exactly what induced employment will result from the plant and any number of scenarios could develop, the FRC alternative which would yield total new employment of about 19,300 rather than the DEIS estimate of 13,400, is likely an overstatement of the expected employment impacts of the proposed project. For induced employment to be this high, the induced production coefficient (the ratio of sales and production to consumer spending) for just the Regional Study Area would have to exceed the U.S. total (see Table 6). Empirical evidence suggests that economic base multipliers are more appropriate for estimating the effects of general industrial expansion (i.e., all economic activity) than those of a specific new activity.

The methodology used in the DEIS for estimating secondary (indirect and induced) employment is discussed extensively in Working Paper III (Operations). Its basic steps are:

- Estimating the indirect and induced production coefficients appropriate for the Regional Study Area,
- Disaggregating indirect and induced production into sales in each sector of the Regional Study Area economy, and
- Estimating employment to sales ratios for each sector and thus total employment.

The key elements in developing the indirect production coefficient were the proposed product mix of the Lakefront facility, its geographic proximity to steel customers, established marketing practices in the steel industry, the industrial base of the Regional Study Area, and location decision-making practices in steel-using industries. These factors combined to limit the expected development of indirect activities in the Regional Study Area. Information provided by U.S. Steel purchasing department officials, discussions with representatives of companies which presently supply steelmaking facilities in the eastern United States, and a detailed review of the Regional Study Area's current industrial base were used to determine the sectoral disaggregation of the indirect production coefficient.

Chapter 6 of Working Paper III describes the sources of information used in estimating the induced production coefficient for the Regional Study Area. While there are no input/output tables for this area, I/O data for other states and regions indicate the Regional Study Area's

induced coefficient would be in the range of [illegible]. The coefficient for the entire United States was estimated to be 2.14, that is, for every dollar of consumer spending, there would be an increase of $2.14 of production in the national economy.) For several reasons discussed in the working paper, the study area's coefficient was assumed to be at the higher end of this range early in the projection period and to increase over time as population increases and a greater fraction of the consumer's dollar remains in the Regional Study Area with the introduction of new goods and services. In fact contrary to the opinion expressed in the comment, part of the reason for this increase is the projected lack of surplus capacity in the region's secondary sectors. (References to surplus capacity in the DEIS pertain to physical facilities, not employment.)

The increase in consumer spending (i.e., direct and indirect payrolls earned by study area residents) can be translated into increased production (sales) in each sector of the Regional Study Area economy. Chapter 7 of Working Paper III describes the derivation of the employment increases. Briefly, national payroll to sales ratios were used to estimate how much of the increased sales in each sector would become payroll. Then average annual earnings per employee by sector for the study area were used to calculate the number of new employees associated with the increased payroll.

It should also be noted that an additional component of induced employment was estimated based on population rather than income increases. Public employment (teachers, firemen, etc.) in particular is related to population rather than income. For the purposes of this analysis, the induced production coefficients for the medical services, private education services, and government sectors were assumed to be zero. Increased employment in these sectors was estimated as described in Working Papers V through X.

This comment and many others dealing with secondary employment are phrased in terms of economic base multipliers. As should be apparent from the description above, the DEIS analysis did not use this economic-base multiplier technique. As mentioned previously, empirical results show limitations in the economic base approach when one is estimating the impact of a particular new activity on an area. This type of multiplier relationship appears to have more validity when used to look at overall expansion of an economy's basic sector.

It is worth noting, first of all, that the determination of the current ratio of basic to non-basic employment is far from simple. One of the standard references on economic base studies* suggests that any indirect measurement of the relationships in an area's economy presents problems and may produce misleading results. Moreover, the most common indirect measurement (suggested in more than one comment) is probably the least useful.

> "The assumption approach is the simplest. An arbitrary assumption is made as to what it export and what is local employment. The usual assumption is that all manufacturing and agriculture is export and the rest is local. This has been done, and it is attractive because of its simplicity.
>
> The error involved in such an assertion can be enormous. A good deal of the manufacturing industry's products are locally oriented. For example, bakeries, printing and publishing, and brick manufacturing industries are classified as manufacturers. Yet the markets they serve are largely local. On the other hand, many services are non-locally oriented such as home offices of insurance companies. In addition, the larger the region, the more likely that a large portion of the manufacturing industry will serve the local market. This approach need not be considered any further."

Therefore, the 45:55 ratio suggested in the comment, which used 1974 employment in manufacturing, agriculture, mining, and construction in the Regional Study Area to define the economic base, cannot be used to project the impacts of the proposed plant with any degree of confidence. Furthermore, C.M. Tiebout and others suggest that employment may not be

*Charles M. Tiebout, "The Community Economic Base Study", Supplementary Paper No. 16, Committee for Economic Development, December 1962.

the best unit of measurement for economic base relationships. Income may be a better tool for measuring these relationships because employment ratios are affected by part-time workers, varying levels of productivity, marginal and average employment requirements, etc., which may add significant bias to the study of a smaller region.

Another serious shortcoming of the economic base multiplier approach for an analysis of this type, whose purpose is to measure the impacts of a specific project rather than general economic growth patterns, is its inability to distinguish among classes of workers. Many of the socioeconomic and physical environmental characteristics considered in this DEIS are as sensitive, if not more sensitive, to changes in population as to changes in employment. Some areas of "non-basic" employment would not be affected by an increase in "basic" employment unless the new jobs were accompanied by new population (e.g., government services). As the number of two-earner households increase, it becomes more likely that employment increases in a given region may not be accompanied by population increases. Another example of the importance of worker classifications is commuters. If a significant share of new "basic" employment is held by workers who are not residents of the region being analyzed (as is particularly true in the construction phase of the proposed project), overall economic base relationships would not apply. In an extreme example, all of the workers at a new industrial facility might be daily commuters from outside the defined region of analysis. In this case, the only "non-basic" employment created for the region would be a few jobs at gas stations and lunch counters.

These examples point out what are believed to be some of the advantages of the DEIS production/payroll/employment approach. It is possible to incorporate the effects of commuters and regional residents by assuming different amounts of local payroll spending for each class of workers (e.g., only a tiny fraction of commuter payroll is assumed to be turned into consumer spending in the Regional Study Area) and by estimating the income-related and population-related components of secondary employment separately.

Perhaps the major problem with using the estimate of induced employment suggested in the comment is the implied consumer spending multiplier which is calculated from the FRC employment figures. Table 5, which was initially prepared in response to population comments from the Northwest Pennsylvania Futures Committee (NWPFC) and the Crawford County Planning Commission, shows the induced production coefficients implied by alternative estimates of induced employment. The FRC alternative is roughly equivalent to the NWPFC estimate.

Table 6 and Figure 1 (based on data presented in greater detail in Working Paper II) show the relationship of these implied induced production coefficients to those developed in national and state input/output studies.

Further Response to Comment 3:

The comment states that the DEIS distinction among direct, indirect, and induced employment in estimating in-migration is unwarranted and that the 60%-100%-100% assumption used to calculate the original resident share of new employment is not adequately justified. The comment suggests that past experience be researched to determine what share of all new employment is likely to be filled by in-migrants. Furthermore, the issue of people who migrate to the area and cannot find jobs should be addressed.

The DEIS presents a reasonable picture of a likely level of in-migration as well as a reasonable range of variation (see the beginning of the regional economic impact section of Chapter 4). The methodology used to estimate in-migration is described in Working Paper III and includes an assessment of available studies of past projects. Furthermore, in the DEIS in-migration was not calculated by a 60%-100%-100% share of direct, indirect, and induced jobs. These shares represent the jobs which would be available to regional residents after consideration of expected transfers and primary in-migrants. In fact, regional residents are expected to fill about 50% of all direct jobs and 70% of secondary jobs. Some of the in-migrant households would have secondary earners who are assumed to work at jobs other than those at the plant.

TABLE 6

INDUCED PRODUCTION PER DOLLAR OF CONSUMER SPENDING

	Base Year of I/O Data		Population	Induced Production
	Year	Coefficient	(000)	Coefficient (1975 $)
United States	1967	2.03	197,400	2.14
Texas	1967	1.46	10,600	1.54
Georgia	1970	0.99	4,603	1.01
Missouri	1967	1.14	4,545	1.20
Washington	1967	0.89	3,175	0.94
Houston-Galveston (Texas)	1967	1.29	2,558[1]	1.36
Kansas	1969	0.72	2,249	0.75
High Plains (Texas)	1967	0.67	915[1]	0.71
Upper Rio Grande (Texas)	1967	0.78	379[1]	0.82
Regional Study Area				
• ADL/DEIS			506	1.00
• Crawford County Planning Commission				1.61-2.25
• Northwest Pennsylvania Futures Committee				2.70
• FRC				2.65

[1] 1970 Population estimates; data for all other areas reflect population in same year as I/O tables.

Source: D.E.I.S. Volume 8, Working Paper III, Chapter 5 and Table 4 of the handout entitled, "Comparative 1990 Population Estimates and Assumptions for Proposed U.S. Steel Lakefront Plant" dated September 11, 1978.

TABLE 5

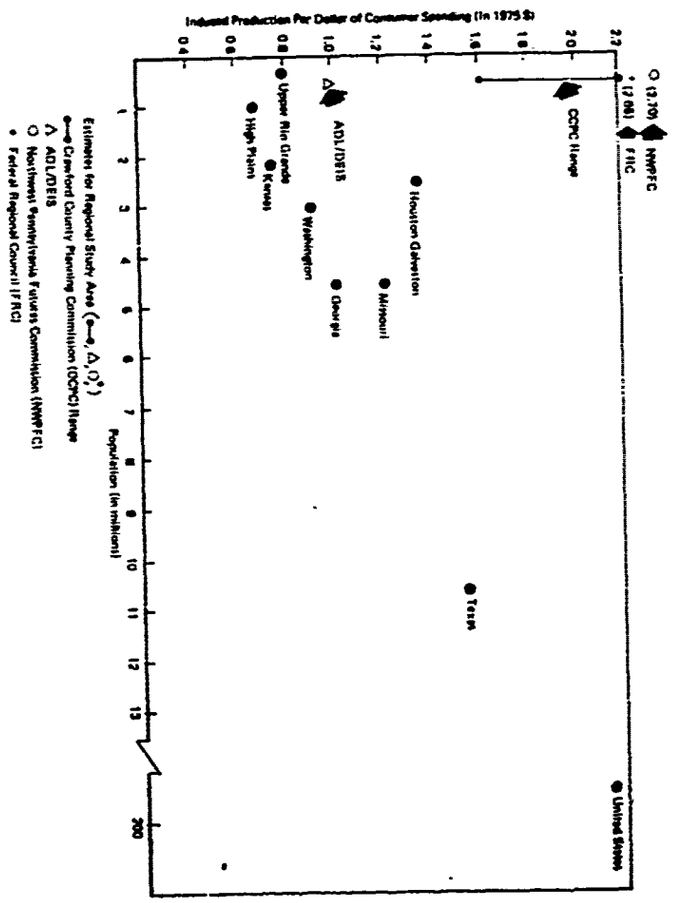
IMPLIED INDUCED COEFFICIENT FROM
ALTERNATIVE ESTIMATES OF INDUCED EMPLOYMENT

	Total Induced Employment	x	Average Value of Production Per Employee	=	Total Induced Sales ($m)	÷	Direct and Indirect Payrolls ($m)	=	Induced Production Coefficient
ADL/DEIS	3,600				$ 151.8		$ 151.8		1.00
Northwest Pennsylvania Futures Committee	9,400		[$42,170][1]		$ 396.4		$ 146.9		2.70
Crawford County Planning Commission	6,250-7,750[2]				$263.6-326.8		$163.5-145.0		1.61-2.25
FRC	9,528				$ 401.8		$ 151.8[3]		2.65

[1] D.E.I.S., weighted average for all induced activity sectors.

[2] Estimated; CCPC did not explicitly estimate the separate impacts on indirect and induced employment, they estimated the combined total secondary impacts. The employment range on this table was derived by using the ratios of induced to total secondary employment estimated by ADL and the Northwest Pennsylvania Futures Committee. The implied ratios were 0.74 and 0.91 for ADL and Northwest Futures, respectively.

[3] The FRC comment apparently accepts the DEIS estimate of indirect employment (and therefore payroll).



Source: Arthur D. Little, Inc.

FIGURE 1 ALTERNATIVE ESTIMATES OF INDUCED PRODUCTION COEFFICIENT

The projections of in-migration in the DEIS were conditioned by the availability of surplus labor in the region, information about expected levels of transfers, and information about the new jobs themselves (industry and wage rates).

It would be unreasonable not to consider the three impact streams (direct, indirect, and induced) separately in determining migration rates. Information was available from U.S. Steel and potential supplier firms on expected rates of transfer from existing operations. More important, however, the difference in wage rates for direct and secondary jobs would have dramatic effects on the likelihood of attracting in-migrants. Potential wage levels are one of the most significant factors considered in labor market analysis and, as shown in Table 4-17 in the DEIS, wages in direct jobs would exceed those in secondary jobs by more than 60%. The jobs at the steel mill would thus be much more likely to make a primary wage earner move (with his family) to the study area than a job in secondary industry, such as, local fast food outlets, dry cleaners, movie theaters, etc.

The majority of the induced jobs are expected to be relatively low-skill, low wage jobs in retail trade and services. When these jobs are filled by in-migrants, they are likely to be spouses or children of primary in-migrants (those people who move to the Principal Study Area to work at the steel mill). A person who applies for a steel mill job but is not hired (particularly a person who is already employed elsewhere) would probably not look further in the study area. An unemployed job seeker who did not obtain a job at the plant might consider taking a lower-paying job, but might be deterred by the expected tight, high-cost housing market in the area. Moreover, since much of the secondary employment is likely to be in expanded local businesses or new businesses run by local entrepreneurs or managers, in-migrants would most often by hired only if area residents cannot be found.

As discussed in Working Paper III, the methodology for estimating the number of in-migrants began with an estimate of total new jobs. The number of jobs expected to be filled by women was also estimated. (U.S. Steel is committed to a 20% female hiring objective at the plant.) The expected number of transfers (male and female) was then subtracted to yield total jobs available in each impact stream for men and women.

The expected employment opportunities for women, particularly at the steel mill, are particularly important in estimates of in-migration. It is still extremely rare for American families to move because of the wife's job, so that it was assumed that jobs expected to be filled by women would go to original residents. If U.S. Steel does meet its declared female hiring objective, 20% of the new direct employment opportunities would be closed to potential in-migrants.

As discussed in the working paper, available studies on employment of local residents and in-migration were reviewed, but none was found that was directly applicable to the DEIS analysis. While some studies surveyed plant or construction workers to estimate in-migration rates, no study was found of total in-migrant employment. In most cases, it is not possible (after the fact) to separate development-related secondary jobs from other growth-inducing events (e.g., suburbanization trends, other unrelated new industry in the area). Similarly, quantitative models of in-migration were reviewed, but none was found that adequately explained actual experience.

The one conclusion that was drawn from a collection of case studies was that areas undergoing industrial development generally experienced some decline in their unemployment rate. This formed the basis for part of the DEIS estimate of in-migration — that is, empirical evidence indicates that some decline in the Regional Study Area unemployment rate is likely to occur. The details of the assumptions that formed the basis of the most likely in-migrant estimate and the high and low alternatives are presented in Working Paper III and summarized in Chapter 4 of the DEIS.

The estimates in the DEIS present a reasonable picture of the number of jobs that would be filled by in-migrants, particularly when the availability of supplementary wage earners in mover households is considered. It was estimated that 25% of the spouses of in-migrant plant workers would seek jobs in the study area. This estimate was based on 1975 national data correlating the percentage of working wives with husbands' incomes. However, the recent rapid growth in two-income families, continued inflation, and the expected high cost of housing in the study area indicate that this estimate may be too conservative and that more wives of primary in-migrants may enter the labor force. If the number of two-income families among the in-migrants households reached the current national average of 50%, more than half of the secondary jobs could be filled by in-migrants, approximately the share for direct jobs. This would, basically, create a situation in which there would be little or no decline in the Regional Study Area unemployment rate, but would not affect the estimates of new population.

As noted in the comment, the DEIS does not directly consider possible in-migration over and above actual employment opportunities. While this is a possibility, such a level of in-migration is impossible to estimate or characterize and would introduce unnecessary speculation into the impact estimates. While it would be simple to raise all estimates of new population and therefore all other impact measures by 15-5%-10% or more to account for such "unsuccessful" in-migrants, such a move would lend little or no additional strength to the DEIS analysis.

What can be concluded from available evidence is that the number of in-migrants who come to the Regional Study Area and remain when they cannot find work is likely to be small. A study prepared for the U.S. Department of Labor on family migration patterns concluded that "recent arrivals who are unable to find acceptable employment are especially likely to move again and to return to places where they have lived before."*

* The Rand Corporation, "Why Families Move: A Model of the Geographic Mobility of Married Couples", September 1976.

In addition, because the Regional Study Area is easily accessible from many major North Central cities, it is likely that job seekers would travel to the study area and apply for employment before they made a commitment to move. After they were assured of employment, they would buy or rent housing and move their families.

In summary, the DEIS estimates of in-migration and thus population appear reasonable in the context of what is known about the proposed project and the Regional Study Area labor market, available evidence from other industrial development projects, and characteristics of family migration.

Response to FRC Comment 4:

The comment states that baseline population projections are acceptable. Use of recently revised projections for some parts or all of the Regional Study Area would have no significant effects on the DEIS analysis.

Response to FRC Comment 5:

The comments states that the allocation of the majority of new residents to the Coastal Communities is premature and subject to challenge because population growth will be determined by government policies, preferences of new residents, and market forces. The DEIS should not attempt to project geographic distribution of growth and discussion of community-specific impacts should be deleted from the study.

While it is acknowledged that any projection of residential choices must be based on several assumptions and that the actual pattern of population distribution cannot be projected with certainty, it is believed the DEIS allocation of population distribution is reasonable in light of current location trends and conditions in the Regional Study Area. Other scenarios of population distribution can be argued to be possible, but the DEIS has used a scenario believed to be reasonable for purposes of analysis.

It is important to note that many of the potential impacts of greatest concern to local residents and officials -- particularly public expenditure requirements and associated tax impacts -- could only be addressed if allocation of new residents to individual communities was undertaken. Moreover, impacts can be diluted to insignificance by dispersing an anticipated population increase into a large region, therefore it was considered useful to assess potential local area effects for a relatively concentrated population distribution.

It is also important to be aware of the difference between an impact assessment and a comprehensive plan. Most specifically, it is not the purpose of the DEIS to recommend appropriate objectives and policies for for individual communities. The DEIS attempts to present a most likely, reasonable estimate of specific impacts based on conditions in the study area at the time of the analysis. The 22 working papers, and most importantly Working Papers II and III, lay out the assumptions and data on which the estimates are based. If state, regional, or local decisions and actions alter the conditions or trends on which the analysis was based -- for example, by exclusionary zoning or provision of additional infrastructure -- the DEIS estimates may need to be reconsidered (or revised) by local planners and other appropriate officials. Specific actions to accommodate impacts must be based on ongoing evaluation and monitoring of changing conditions.

Chapter 9 of Working Paper III presents a detailed rationale underlying the residential allocation of the new population in the Regional Study Area. Both the attractors and inhibitors characterizing the various communities of the Regional Study Area were reviewed and assessed, with a reasonable distribution derived to serve as the basis for resident allocation. As the working paper notes, unless an alternative distribution pattern is adopted that disregards present trends in the area, availability of infrastructure, transportation and climate, and other factors assessed in this part of the study, the resultant overall residential pattern would not likely differ significantly from that used in the DEIS. Moreover, the analysis does recognize the opportunity for new development south of I-90 but presents a long list of factors and considerations that would limit such development. Previous studies have clearly demonstrated, as noted in Chapter 10 of the working paper, the importance of such factors in the residential choice decision process.

APPENDIX "G"

Agency Responses to Pertinent Issues Raised by
The Corps Staff

NCBCO-S

20 November 1978

Mr. Donald Wallgren
Deputy Director
Surveillance and Analysis Division
U.S. Environmental Protection Agency
Region V
536 South Clark Street, 10th Floor
Chicago, IL 60605

Dear Mr. Wallgren:

My staff is now preparing the final Environmental Impact Statement (EIS) on the proposed U.S. Steel Corporation Lakefront Steel Plant in Conneaut, Ohio. As you know, this document will contain both the letters of comment received during the review of the draft EIS and our responses to the various issues and concerns raised.

Many of the comments I have received pertain to actions which are regulated either directly or indirectly by the U.S. Environmental Protection Agency. Often these questions deal with complex issues that require a thorough working knowledge of your regulations and guidelines. Therefore, to address each of these concerns as thoroughly and accurately as possible, I must have input from your agency.

Attached to this letter you will find a list of questions pertaining to certain key air and water quality issues involving the proposed Lakefront Plant. Please answer each question and forward your responses to me at the earliest possible date.

Your prompt attention to this request will insure that the final EIS is prepared in a timely manner. If you require additional guidance please contact Mr. Paul Leuchner of my staff. He can be reached by calling (FTS) 473-2321.

Sincerely yours,

DANIEL D. LUDWIG, P.E.
Colonel, Corps of Engineers
District Engineer

Air Quality

1. Define and explain the administrative steps that will be followed during the review of the Prevention of Significant Deterioration (PSD) application for the proposed Lakefront Steel Plant.

2. Indicate when and how the general public will be involved in the PSD review process.

3. Please define in detail the methods of evaluation that will be used to assess the direct and indirect impact of the Lakefront Plant Emission sources on visibility, soils, vegetation, and growth.

4. The proposed plant will emit non-methane hydrocarbons which are ozone precursors. Often the formation of this pollutant occurs many miles downwind of emission sources. Will the PSD review take into consideration the downwind effect of ozone on agricultural crops, nursery stock, and native vegetation in New York and Pennsylvania. If so, then describe the methodology that will be used to perform this evaluation.

5. Will any construction be permitted on the Lakefront plant site prior to reaching a decision on the PSD application submitted by the US Steel Corporation?

6. Have you defined an offset policy for non-methane hydrocarbons emitted by the proposed steel plant? Will the reductions specified in the offset plan result in detectable decreases in ozone levels downwind of the plant and will these reductions afford sufficient protection to agricultural crops or native vegetation in the area?

7. Define the intent and effectiveness of the PSD regulations, New Source Performance Standards, and primary and secondary National Ambient Air Quality Standards as they relate to the protection of public health and welfare, property damage, fish and wildlife sources and both natural and cultivated vegetation. What degree of protection is afforded, if the Lakefront plant meets all of these standards?

8. What is the potential for crop damage due to the synergistic interaction of pollutants downwind of the Lakefront Plant? Will this concern be addressed during the PSD review?

9. Please define the geographic area that will be subject to the offset policies for non-methane hydrocarbons and explain how these boundaries were determined.

10. A number of comments reflect the opinion that the US Steel Corporation has deliberately located their coke making facilities in Ohio due to less stringent enforcement of air pollution regulations. Other comments indicate that process units have been located on the state line so as to pit one regulatory agency against another. Obviously there is considerable confusion regarding the enforcement of air quality standards. Please respond to the following questions:

a. Who will have enforcement and monitoring authority over emission sources which are traversed by the Pennsylvania-Ohio State Line?

b. Will monitoring and enforcement be a cooperative effort on the part of both State regulatory agencies?

c. What role will the USEPA plan in monitoring and enforcement issues related to the proposed Lakefront Plant?

d. What courses of action are available to EPA, if the State regulatory agencies are remiss in their enforcement responsibilities?

11. What criteria were used to define Best Available Control Technology?

12. Ambient air quality in Conneaut falls within the Class II designation. What classification is retained by Ashtabula and Cleveland, OH?

13. Explain the procedures that are available to reduce or shut down major emission sources during an air pollution alert. Are the curtailment orders voluntary or mandatory?

14. Define the course(s) of action that will be followed by the EPA if emissions at the proposed Lakefront plant are found to exceed air quality standards due to equipment failure or negligence on the part of the US Steel Corporation. How quickly can compliance be achieved under these circumstances. If the emissions have caused crop or property damage what legal courses of action are available to the public to recover these losses? Will the USEPA seek similar relief through the courts?

15. How often will the air quality permits be subject to review and which agency would perform the review?

Water Quality

1. What course of action will be followed if the plant discharge is found to violate the effluent limitations contained in the NPDES permit either due to equipment failure or negligence on the part of the US Steel Corporation? How much time will be required to bring the plant back into compliance?

2. Define and explain the administrative steps that will be followed during the review of the NPDES permit for a new source industrial facility such as the proposed Lakefront steel plant. When and how is the public involved in this process.

3. The authority for issuance of NPDES permits has been delegated to the State of Ohio. Please explain the role of the USEPA in the overall NPDES permit process when delegation occurs.

4. The draft EIS on the proposed Lakefront Plant indicates that the location of the intake structure may have an adverse impact on ichthyoplankton during normal operation. Evaluation of the intake design, location, and operating conditions generally occurs during the NPDES review process. Please answer the following questions:

a. The intake will be evaluated in terms of its impact on aquatic resources during the NPDES review. Please explain how this evaluation will be performed.

b. The NPDES permit authority has been delegated to the State of Ohio. Please define the role of the USEPA in the evaluation of the intake design and location during the discharge permit review process.

c. If additional sampling is required to complete this evaluation indicate where and when it will be performed.

d. What types of ichtyoplankton entrainment and fish impingement monitoring will be required, if any, during plant operation? If monitoring is required, and the monitoring program demonstrates significant losses of ichthyoplankton or fish, what regulatory actions can be taken to insure that proper modifications to the system are made.

e. If the design or location of the present intake structure cannot be changed will a demonstration report be prepared in accordance with Section 316 b of the Clean Water Act.

5. If the plant effluents are found to exceed water quality standards outside the mixing zone causing a massive fish kill who will bear the cost of clean-up operations? Will the plant be ordered to shut down if such a situation occurs.

6. Many individuals have expressed concern that the Lakefront plant discharge has been placed in Ohio waters because water quality standards are less stringent.

a. What is the role of the USEPA in the enforcement of water quality standards?

b. Pennsylvania is directly down current of the plant discharge. Will the concerns of the Pennsylvania regulatory agencies be considered during the NPDES review process?

c. If the discharges from the proposed Lakefront plant are not outside the mixing zone will sufficient protection be provided for Presque Isle and the City of Erie potable water intake?

7. Some toxic substances present in the plant effluent may be ingested by organisms at the lower trophic levels and subsequently transmitted through the food chain. Very little data are available regarding the individual or synergestic interaction of these substances. Does USEPA plan to monitor the Lakefront plant discharge to determine the fate of these compounds in the aquatic environment. If not, then how will the USEPA address the potential adverse impacts associated with the biomagnification of toxic substances which may be present in the steel plant discharge.

8. Concerns have been raised by the City of Erie regarding the effect the US Steel Corporation Lakefront plant will have on their potable water intake. Specifically, discharges of cyanide, fibrillar sulfide and arsenic may require additional treatment of water while the presence of phenol and chlorinated hydrocarbons would require the installation of expensive monitoring equipment and activated charcoal filter systems.

a. Who will determine whether or not the plant effluent will have an adverse impact on the City of Erie water intake and how will this evaluation be performed?

b. If the plant discharge is found to have an adverse effect in combination with baseline water quality conditions than who will fund the cost of monitoring and treatment equipment?

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST
CHICAGO ILLINOIS 60604

FEB 12 1979

Colonel Daniel D. Ludwig
District Engineer
U.S. Army Engineer District, Buffalo
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

In response to your letter dated November 27, 1978, we are providing you with answers to your list of questions pertaining to certain key air and water quality issues involving the proposed U.S. Steel Lakefront Plant in Conneaut, Ohio. Because the project also involved our Region III office in Philadelphia, Pennsylvania, we have coordinated our response with the staff in Region III. If there are any questions concerning the attached response, please contact Mr. Joseph Sovcik at 312/353-2307 or FTS-353-2307.

Sincerely yours,

Donald A. Wallgren
Deputy Director
Surveillance and Analysis Division

U.S. Steel Lakefront Plant, Conneaut, Ohio
Response to Questions on Air Quality

1. Quidelines for review of the application for approval appear under the regulations for the Preventions of Significant Deterioration of Air Quality (PSD) (40 CFR 52.21). Administrative procedures include preliminary review of an application for PSD approval. U.S. EPA, Region V, must address any deficiencies within 30 days of receipt of an application, and upon receipt of a fully complete application, it must make a preliminary determination of approval or disapproval within 30 days. Immediately following, public notice must be made by publishing the opportunity for written comment in a local newspaper. The opportunity to request a public hearing is also given at that time. Comments and results of any hearing requested are then weighed when making a final determination. The review process normally takes from 4 to 9 months.

2. After preliminary determination has been made, the public will be given 30 days to comment on the proposed action. This notice period also gives the opportunity to request a public hearing on the PSD approval.

3. Answers to questions Nos. 3 and 8.
For a PSD application, the impact on visibility, soils and vegetation will only be addressed if Class I areas are likely to be impacted or if there is a likelihood of adversely impacting the commercial value of crops, recreational value, etc. At the present time, the state-of-the-art is still too rudimentary to accurately establish such impacts. However, if U.S. Steel does plan to apply for a PSD permit and good methodologies are available to quantify and evaluate such effects, U.S. EPA, Region V, will ask U.S. Steel to do the appropriate analysis if deemed necessary.

4. A PSD review applies routinely to every new source construction regardless of location. However, since the proposed plant locating in Ashtabula County is likely to impact only nonattainment areas (Ashtabula and the surrounding counties in Ohio and Pennsylvania are designated as such for oxidants), then the Emission Offset Policy (EOP) or Interpretative Ruling of 40 CFR 51.18 also applies. Assuming the proposed construction is a major source (i.e., greater than 100 tons per year of allowable organic compound emissions), requirements under the EOP include the application of Lowest Achievable Emission Rate (LAER) control technology and a greater than one-for-one emission offset from existing sources.

   At the present time, it is not possible to recommend an approved EPA model which can quantitatively determine downwind impact. Ozone modelling techniques are being developed which could be capable of simulating the impact of an isolated source of emissions. However, at this time, one can only address this issue in a qualitative fashion. If a net reduction in volatile organic compounds (VOC) emissions occurs, through the use of more than one-for-one offsets, a net improvement in photochemical oxidant air quality should occur. This is based on the current EPA photochemical oxidant control strategy which dictates a reduction in VOC emissions to attain the oxidant standard.

5. No construction will be permitted on the site prior to final approval by U.S. EPA, Region V, on the PSD application submitted by the U.S. Steel Corporation.

6. Since the proposed plant is likely a major source locating in a designated nonattainment area, the requirements of the EOP or Interpretative Ruling under 40 CFR 51.18 apply. A provision of this policy requires that the proposed plant secure more than equivalent emissions from existing sources to offset actual emissions from the new construction. The results of implementing the greater than one-for-one offset, as required by the policy, will result in a decrease in photochemical oxidant concentrations.

   This is based upon a qualitative assessment of the situation. It is not possible at this time, however, to quantitatively assess this impact using an EPA-approved ozone modelling technique for an isolated source.

7. The intent of the National Primary Ambient Air Quality Standard is to ensure the attainment and maintenance of such criteria that allowing for an adequate margin of safety, are requisite to protect the public health. Secondary National Ambient Air Quality Standards specify the protection of the public welfare from any known or anticipated adverse effects associated with the pressure of such air pollutant in the ambient air.

   Both the Standards of Performance for New Stationary Source (NSPS) and the (PSD) regulations afford protection for the primary National Ambient Air Quality Standards. Section 111(a)(1)(C) of the Clean Air Act of 1977 as amended specifies that for NSPS, the emission reduction achievable through the application of the best system of continuous emission reduction must take into consideration both the cost of achieving such emission reduction and any nonair quality health and environmental impact and energy requirements.

   Section 160(1) states the purpose of PSD as being the protection of the public health and welfare from any actual or potential adverse effect which may be anticipated to occur from air pollutant or from exposure to pollutants in other media, not withstanding attainment and maintenance of all National Ambient Air Quality Standards.

   Section 160(2) goes further to state the intent of PSD as being the protection, preservation and enhancement of the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic or historic value.

   Upon receiving all necessary State and Federal permits and approvals, the U.S. Steel Lakefront plant will have met all the above standards.

9. From its monitoring network., the Ohio EPA has recorded ambient readings in excess of the current oxidant standard. These excessive readings were observed throughout most counties of the State. On this basis and upon recommendation of the Ohio EPA, the U.S. EPA, Region V, designated 63 counties of Ohio as nonattainment areas under section 107 of the Clean Air Act (CAA). Under the same process, the U.S. EPA, Region III, designated each county in the State of Pennsylvania as nonattainment area for oxidants. Major sources which impact nonattainment areas are subject to the offset policy (see 40 CFR 51.18).

The EPA offset policy suggests that the geographic area for finding offsets for VOC sources should be as flexible as possible. Ideally, the offsets should come from sources as near as possible to the site of the proposed source. If this is not possible, the next area to consider for offsets would be the Air Quality Control Region where the proposed site of the source is located. Failing in this, the final area for consideration of offsets would be within a 36-hour travel time of the proposed source site. It would be necessary to determine a baseline windspeed for this travel time. Consideration should be given to an analysis of previous multi-day stagnation episodes to determine the appropriate upwind distance which would represent the outer limit for the offsets. However, if one does use the upwind travel time of 36 hours as a measure, the offsets required should be greater than one-for-one. At the present time, it is not possible to specify what this greater level should be. An offset requirement of three-to-one has been used in other places, e.g., Texas. However, we are unaware of the rationale for this choice.

10. The requirements for new steel sources are largely the product of U.S. EPA expertise. Since permits which include specific emission limitations for each emission point are required from U.S. EPA, Region V, before construction commences, location of the facility on the State line is relatively insignificant. Each State has authority to enforce within its own boundaries. However. U.S. EPA's role as overseer of enforcement frequently changes to vigorous direct action when a State fails to require compliance with the rules. EPA has dual authority to enforce its own permits as well as the Air Pollution Control Rules of both Ohio and Pennsylvania. These include civil and criminal actions. We hope the enforcement and monitoring functions will be a cooperative effort.

11. If a source has an increase in allowable emissions of greater than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour (whichever is most restrictive), it must apply Best Available Control Technology (BACT). BACT is defined as an emission limitation based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted. The energy, environmental, and economic impacts and other costs are considered on a case-by-case basis, and a determination is made through application of production processes or available methods, systems, and techniques. Application of BACT may never result in emissions which would exceed the emissions allowed by any applicable standard under 40 CFR Part 60 and 61.

12. Both Ashtabula, Ohio and Cleveland, Ohio are in class II areas. There are no class I areas in Ohio.

13. First, new source permits for the facility cannot be issued unless U.S. Steel demonstrates that health related ambient air quality standards will always be met. In the unlikely event that alert levels are reached, the usual procedure involves voluntary cutbacks in operations (at the request of the local health agencies). If cutbacks do not occur or air quality deteriorates further, requests for cutbacks are fully enforceable.

14. Any failure by U.S. Steel to comply with permit or regulatory requirements can be followed immediately by the commencement of administrative enforcement action. If compliance does not result, judicial action will follow. The rapidity with which compliance can be achieved depends on the magnitude of the repairs. Of course, equipment failure which causes pollution can be stopped simply by shutting down the process equipment. EPA will seek both injuctive and monetary relief. 42 U.S.C. Section 7413(b) and (c).

    Citizens have a statutory right to enforce the applicable State Implementation Plan (State Regulation) against U.S. Steel. In addition, the traditional common law remedies are also available.

15. The air permits' conditions will be contained in the permits themselves. U.S. EPA's, Region V, PSD approval will not be reviewed after approval, however, periodic monitoring may be required to ensure compliance.

Response to Questions on Water Quality

1. Answers to Questions Nos. 1 and 5.

Both questions No. 1 and 5 relate to actions the U.S. EPA will take in the event that U.S. Steel violates the permit effluent limitations.

Question No. 1 inquires as to what action the U.S. EPA will take if U.S. Steel violates the permit effluent limitations due to equipment failure or negligence.

Question No. 5 inquires as to what action the U.S. EPA will take if U.S. Steel violates the permit final effluent limitations, and the violation is excessive enough to exceed the water quality standards outside the mixing zone resulting in a massive fish kill.

Neither question states at what plant production level the violations will occur. Namely, during the plant startup or after the plant has achieved production design capacity.

Through the issuance of the NPDES permit for the plant, the State of Ohio and the U.S. EPA will be taking preventative actions to insure that the effluent limitations are not exceeded.

The preventative actions incorporated in the NPDES permit are:

1. The establishment of effluent limitations from either the Best Available Demonstrated Technology or Ohio Water Quality Standards whichever is more stringent.

2. U.S. Steel will be required to submit to both Ohio and the U.S. EPA Discharge Monitoring reports. These reports will report the daily sampling results. From these reports, both Ohio and the U.S. EPA will be able to judge the performance of the treatment facilities and from the data submitted, will be able to determine if the final effluent limitations are achievable when the plant attains production at design capacity.

Included in the reporting requirements is a requirement that U.S. Steel must report an exceedence of a daily maximum limitation within five days.

3. The NPDES permit will contain a Compliance Schedule leading to attainment of final effluent limitations, as well as, interim effluent limitations for the various production levels as they are attained. The interim limitations can be more stringent than the final effluent limitations. Both U.S. EPA and Ohio EPA have administrative and judicial enforcement options available to address violations of interim and/or final effluent limitations. Interim limitations for attained production levels can be imposed for the four or more years needed from the start of discharge to attaining production design capacity.

From the foregoing, we have endeavored to describe the recourses that the U.S. EPA has through the NPDES permit to show, that we will not wait until the plant is in full production before we determine if the final limitations can be or are being achieved.

Based on our experience at other plants where U.S. Steel has installed treatment facilities to meet effluent limitations, the time out of compliance for these facilities usually lasts no more than two days. These instances of non-compliance are associated with minor equipment malfunctions or negligent operation.

Most of the treatment facilities that U.S. Steel stipulated they will install, are mechanical or chemical treatment facilities. Therefore, immediate corrective action can be expected and demanded. However, one of the treatment facilities is a biological treatment plant. In such a plant, the most severe malfunction is the killing of the bacteria. If this were to occur, it might require as long as a month for the bacteria to be grown again. However, this should be a rare occurrence because U.S. Steel has operated two such plants for more than four years at each location and has not experienced killing the bacteria.

Since the permit must assure compliance with WQS, any violation of WQS could be addressed by an action to enforce the permit. If a fish kill should occur due to a violation of water quality standards, the remedies are principally those under State law available to State agencies which regulate fish and game. Whether to seek cleanup or reimbursement is a matter of State option.

2. U.S. Steel must submit a permit application to the Ohio EPA, which is responsible for administering the NPDES permit program, at least 180 days before it proposes to discharge from this new source. After receiving the permit application, the Ohio EPA will evaluate it and may ask for additional information. If any additional information is sought but not provided, the Ohio EPA may deny the permit. After Ohio EPA determines that the application is complete, it will prepare a draft permit with specific limits to regulate what may be discharged and how much. Ohio EPA must then give public notice of its intent to issue a permit to U.S. Steel and provide a minimum of 30 days for comments. The public notice will indicate how the public may comment and how to obtain a copy of the fact sheet and proposed permit, if desired. If there is sufficient public interest, Ohio EPA must hold a public hearing on the proposed permit. Both the public notice and public hearing, if held, would provide opportunity for the public to make its views known.

3. A delegated State has the lead role, subject to U.S. EPA overview, in the drafting, public noticing and issuance of NPDES permits. It is the responsibility of the U.S. EPA to review these processes and determine if the proposed permit is consistent with Federal regulations and policies, and any 208 plans and provides adequate opportunity for public comment. The impact on the waters of adjoining States must also be considered. The Regional review will result in a concurrence or a conditional concurrence (subject to specified revisions) being transmitted to the State. If a conditional concurrence is given, the State must notify the Region if it does not intend to comply with any permit changes or additions requested. Upon receipt of notification not to comply, U.S. EPA could formally object to the issuance of the permit. The State is prohibited from issuing a permit if U.S. EPA objects. Should such an objection

occur, U.S. EPA has statutory authority to issue a Federal permit in place of the objectionable State permit. The State may request a public hearing or any federally proposed permit. If U.S. EPA issues the permit, all Federal substantive and procedural rights attach, including the rights of the public to comment on the permit and participate in any proceedings to consider the permit terms and conditions.

4a. The ability of the proposed intake to meet the requirements of Section 316(b) of the Clean Water Act was considered during the draft EIS review by the Permit Branch of U.S. EPA. At that time, it was determined that the intake did not appear to meet the best technology available based upon the information presented in the draft EIS. U.S. Steel has agreed to consider alternatives to the proposed intake. As noted in our December 5, 1978, letter to you we proposed that tentative approval be given for construction of a wedge-wire intake with some additional ichthyoplankton sampling in 1979. We do not anticipate that further review of the intake will be made during the NPDES review. The additional monitoring data collected in 1979 will, of course, be reviewed prior to final approval of the intake.

4b. U.S. EPA has the legal authority to review State proposed permits, including State actions on 316(a) and (b) issues. While it is our policy to work closely with the States and resolve disagreements prior to NPDES issuance, if need be, U.S. EPA can override a State proposed permit and impose appropriate NPDES limitations.

4c. As noted in our letter of December 5, 1978, additional sampling would be conducted during the 1979 spawning season. The U.S. Fish and Wildlife Service would offer expertise in selecting the species, sampling locations and period.

4d. At this time, we do not anticipate that intake monitoring will be required during plant operation. However, the intake is subject to the requirements of 316(b) each time the permit is renewed. Thus, every five years some review of the intake is required. It is difficult to project what new technologies may be developed or how our perceptions of entrainment - impingement problems may change in five years. U.S. EPA is presently assessing the effects of intake losses on the fish populations of the central basin. While we do not presently believe that the U.S. Steel intake would warrant monitoring every five years, much will depend upon the results of the Central Basin effort and many unpredictable factors.

4e. The information presented in the draft EIS has been used to assess whether or not the proposed intake met the requirements of Section 316(b) of the Clean Water Act. We do not anticipate that an additional formal 316(b) submittal will be required. We cannot think of any reason why design or location could not be changed.

6a. Although both Ohio and Pennsylvania Lake Erie water quality standards are presently undergoing revision, both sets of criteria are based upon high quality water use classifications. For most parameters, the controlling use classification is Exceptional Warm Water Habitat (Ohio) or Cold Water Fish (Pennsylvania). The Ohio standards tend to be more stringent in this case.

NPDES permits are required to be conditioned for compliance with water quality standards. Ohio EPA operates the NPDES permit program with vigorous overview from U.S. EPA, Region V. A discharger which violates its permit conditions is subject to enforcement by either State or Federal authorities.

6b. Ohio EPA will submit a draft proposed permit to the State of Pennsylvania for comments. Region V will make sure that all necessary documents for the review of the proposed permit are sent to Region III for review and comment. In turn, Region III will be requested to make certain that the Pennsylvania regulatory agencies received copies of the public notice and draft permit for their review. The comments and recommendations resulting from the State and Region III reviews will be submitted to Ohio EPA and Region V for consideration in the drafting of the final NPDES permit.

6c. Protection of all potable water supplies is a major factor in establishing water quality criteria. The subject water supplies should be adequately protected by the waste control technology to be required at the Lakefront Mill since major emphasis has been placed on control of toxic wastes. U.S. Steel has been told repeatedly that permission to build and operate the mill is contingent upon compliance with all applicable regulations.

7. As part of the environmental impact assessment at the Lakefront site U.S. Steel has collected some baseline data on toxic residues in fish tissue. As the facility is completed and is phased into operation, the discharger will be required to monitor again. In addition, the primary toxics control technology likely to be applied at the Lakefront Mill is undergoing toxicity and bioaccumulation tests at two other U.S. Steel mills. In addition to monitoring required of the discharger, it is likely that U.S. EPA and/or the States will also include periodic sampling to find instances of bioaccumulation, if they occur.

8. The proposed discharge includes an 800 foot radius mixing zone. Considering the distance (greater than 22 miles) to the City of Erie's water system intake, we strongly doubt that any detectable impact would occur to the City of Erie's potable water quality.

We believe that question 8a has been answered by the EIS in its use of the modelling efforts performed.

In response to 8b, the City is responsible for monitoring and treatment equipment installation under the Safe Drinking Water Act. Should any adverse affects occur, because of this steel plant, Federal funds are not available for their correction.

NCBCO-S Re: 77-492-3 28 November 1978
Applicant: U.S. Steel Corporation

Mr. John Kane
Staff Director
Federal Regional Council, Region III
44th Floor, William J. Green Building
6th and Arch Streets
Philadelphia, PA 19106

Dear Mr. Kane:

My staff is now preparing the final Environmental Impact Statement (EIS) on the proposed U.S. Steel Corporation Lakefront Steel Plant in Conneaut, Ohio. As you know, this document will contain both the letters of comment received during the review of the draft EIS and our responses to the various issues and concerns raised.

Attached to this letter you will find a list of questions pertaining to key socio-economic issues involving the proposed Lakefront Plant, Please answer each question and forward your responses to me at the earliest possible date.

Your prompt attention to this request will insure that the final EIS is prepared in a timely manner. If you require additional guidance please contact Mr. Gregory Keppel of my staff. He can be reached by calling (FTS) 473-2322.

Sincerely yours,

DANIEL D. LUDWIG, P.E.
Colonel, Corps of Engineers
District Engineer

I. FUNDING

The projected increase in population due to the construction and operation of the proposed mill will require additional facilities and services which are currently or will be provided by communities located in the Regional Impact Area (Ashtabula County, Ohio, Erie and Crawford Counties, PA). The immediate need for expansion of these facilities and services, along with the capital outlay, makes it necessary for the State and Federal Government to set up a special mechanism allowing these communities to obtain grants and other funds on a top-priority basis. Please address the following concerns:

a. What grants and funds are available for secondary developments in communities located in the Regional Impact Area?

b. What steps must these communities undertake to obtain any monies which may be available to them?

c. What criteria must these communities meet to receive this money?

d. Who will decide how much and where the money will go?

e. What criteria must the communities meet to place them in a "top-priority" status to receive this money?

f. If the money is not available until after the population impact occurs, what can the communities do to alleviate the secondary problems in the interim period?

II. HEALTH

a. What is the cancer rate of the Regional Impact Area, and how does this rate compare to the National rate?

b. Will a coordinated Emergency Medical Service (EMS) system be developed between authorities in both states for mutual responses and assistance without regard for State boundaries.

III. PLANNING

Will the Federal Regional Council initiate the formation of an interstate mechanism between localities and/or the two states to provide a continuing mechanism for planning and policy coordination? The establishment of such an interstate mechanism would measureably aid the handling of secondary impacts by the local, State and Federal Government. If the FRC is involved in the development of this committee, what is the status of it?

MID-ATLANTIC FEDERAL REGIONAL COUNCIL

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Thomas C. Maloney
Chairman

James F. McNeely
Vice Chairman

January 15, 1979

Col. Daniel D. Ludwig, P.E.
District Engineer, Buffalo District
Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

Dear Colonel Ludwig:

This letter provides a specific response to each question posed in your November 26, 1978 letter relative to secondary impacts of the proposed U.S. Steel plant.

The first series of questions is a category labelled "Funding". The introduction of these questions observes that construction and operation of the proposed mill would require additional facilities and services in the three-county impact area. There is no doubt that such substantial needs would arise.

The second part of the introduction to the "Funding" questions states that it will be "necessary for the State and Federal Governments to set up a special mechanism allowing these communities to obtain grants and other funds on a top priority basis." The Federal Regional Council cannot address this issue on behalf of either the Commonwealth of Pennsylvania or the State of Ohio. From the Federal perspective, while such a special mechanism to provide top priority might be helpful to the impacted communities, such a special mechanism is not necessarily an absolute need. Furthermore, there are no plans to create such a special mechanism or to assign such top priority, as such actions for most Federal financial assistance programs would require Congressional approval.

However, as an integral part of the planning process which is now in place (and Federally funded), the Federal Regional Council in Region III, Philadelphia (which serves Erie and Crawford Counties, Pennsylvania) and the Federal Regional Council in Region V, Chicago (which serves Ashtabula County, Ohio) are prepared to offer all possible assistance to impacted communities in obtaining Federal financial assistance to meet the needs created by construction and operation of the proposed mill.

Impacted communities must bear in mind, however, that each project application must meet the requirements of each individual Federal program, and must compete in the normal channels for funding. Thus, there is no guarantee that that impacted communities will receive all the Federal financial assistance they desire, even with assistance from the Federal Regional Councils. Moreover, impacted communities should continue to work to assure that the Federally funded planning process achieves solid results, and that planning products can be used to support project applications as the best and least expensive course available to both local communities and to the Federal Government.

Question I.a. What grants and funds are available for secondary developments in communities located in the Regional Impact Area?

Because of the large number of Federal grant programs available to local or county governments or agencies, and because of the complex and diverse rules governing the funding process for Federal programs, there is no simple, concise answer to this question. The response is necessarily very broad and general.

Communities in the impact area will be eligible to apply for funds from hundreds of Federal grant programs which help to finance water and sewer facilities, roads and other transportation facilities, housing, economic development, schools, hospitals and other medical facilities, social services, community facilities, etc. Each individual program has its own rules and funding procedures, and the funds available vary widely from program to program and from fiscal year to fiscal year. Funding availability during the construction and operations phases cannot be estimated now, as the total funds available will depend upon future Presidential and Congressional budget decisions.

It is critical to note here that substantial portions of Federal aid flow through state governments, so the impacted communities must be prepared to address many of their specific questions to the appropriate Pennsylvania or Ohio state agencies. Clearly, water and sewer facilities and highways will be among the most costly secondary needs, and much of the Federal money for these purposes is administered by the states. Communities impacted by the proposed U.S. Steel plant will need to understand the importance of the two state Governors as managers of many Federal programs.

Question 1.b. What steps must these communities undertake to obtain any monies which may be available to them?

In general, each applicant (either the local or county government or other organization) must meet the specific requirements of the program from which funds are being sought. A few Federal programs (such as community development block grants from HUD or revenue sharing) involve entitlements; in such cases the funding procedures and amounts are already established. In most programs, funding is discretionary or categorical, meaning that the applicant requests funds for a specific purpose and the grant-making agency awards funds in a competition among all applicants. Generally, competition for funding is national, regional or statewide.

Thus, impacted communities will not generally be competing with each other for funds from a "pot" of money set aside for the impact area. There will rarely be such an impact area "pot". Most of the "pots" are national, regional or statewide. Application deadlines and procedures are established by program, so that the system is diverse and complex.

A summary of available programs and application procedures is available in the most recent edition of the Catalog of Federal Domestic Assistance.

From the viewpoint of impacted communities, the Federal grant process is complex and perhaps confusing. Extra professional assistance in preparing grant applications may be desirable. In Pennsylvania, the federally funded Northwest Pennsylvania Futures Committee is to examine this problem and prepare a set of options for local elected officials. Ohio planners should do the same. By the summer of 1979, elected officials should be prepared to decide how best to achieve their "grantsmanship" objectives.

Local and county governments in the impact area may frequently find that it will be useful to "merge" Federal grants from various Federal agencies together using the joint-funding process authorized by the Joint Funding and Simplification Act and OMB Circular A-111. The Federal Regional Councils have the responsibility for implementing joint-funding of various Federal grants. Local and county officials should contact the Federal Regional Councils directly to achieve joint-funded projects. Attached to this letter is a list of Federal grant programs which are suitable for joint-funding.

Question 1.c. What criteria must these communities meet to receive this money?

Simply stated, impacted communities will be required to meet the same standards and criteria as all other applicants. The criteria are established for each individual Federal program; there are no general rules which can be presented here, except to note that demonstration of a clear need is usually required, and satisfactory methods for meeting the need are usually necessary.

Impacted communities should bear in mind several general principles which will tend to affect their success in obtaining Federal funds: (a) inter-community cooperation and coordination throughout the impact area will be important, (b) coordination with state agencies will often be crucial, (c) many Federal programs require a local share which the communities must be prepared to fund, and (d) consistency of funding applications with the products of the Federally-funded planning process will be important. Impacted communities should be prepared to demonstrate the consistency of individual project applications with these planning products and with other established area or regional plans.

Question 1.d. Who will decide how much and where the money will go?

Each Federal program provides for a decision-making process which will govern these decisions. Generally, initial decisions are made locally (or with the state government, depending on the program) and final decisions are made by the Federal grant-making agency.

Local officials should bear two principles in mind: (a) the quality and soundness of the local preparation will affect the extent of the Federal decision-making role, and (b) the integration and coordination with the Federally funded planning process will affect the extent of Federal decision-making. Generally, sound local decisions which are consistant with Federally-funded planning efforts will give greater weight and standing to local decisions and will minimize Federal agency modification of local decisions. Local decision-makers and elected officials can play a significant role in determining where the money will go.

Of course, the total funds available for individual Federal programs will be determined by Presidential and Congressional budget decisions. Given the state of the national economy and the goal of reducing the Federal deficit, funding for most Federal domestic assistance programs will be limited and competition will be keen.

Question 1.e. What criteria must communities meet to place them in a "top-priority" status to receive this money?

As noted above, there are no plans to create a special mechanism to give impacted communities a special top-priority for Federal funding. The criteria are established for each Federal program, both by law and by agency rules and regulations.

The resources of the Federal Regional Councils (III in Philadelphia and V in Chicago) will continue to be available to impacted communities to help identify Federal funding criteria and prospects for individual programs or project applications.

Question 1.f. If the money is not available until after the population impact occurs, what can the communities do to alleviate the secondary problems in the interim period?

As explained above, eligibility and need criteria are established for each individual Federal program. In some cases, need criteria will qualify a community for Federal assistance before any population impact. In other cases, funding eligibility may follow the population growth.

The ongoing Federally-funded planning process should identify any potential problems created by a time gap between population growth and funding eligibility. The plans themselves should propose interim mitigative measures for local officials to implement. The Federal and state governments can usually find ways to help alleviate such problems. The local Federally-funding planning process should identify any such potential problems at an early stage so that Federal and state agencies can prepare to provide appropriate relief.

11. HEALTH a. What is the cancer rate of the Regional Impact Area, and how does this rate compare to the national rate?

Cancer data is collected by county units. Because only parts of Erie and Crawford Counties in Pennsylvania are within the defined Regional Impact Area, it is not possible to obtain data for the exact Regional Impact Area. Instead, data for each of the three counties in the impact area are presented below, together with a three-county aggregate. The three-county aggregate is the closest possible area to the Regional Impact Area.

The national cancer rate is also presented below, together with the statewide rates for Pennsylvania and Ohio. Comparisons between the three-county impact area and the states may be more meaningful than using the national average, because the impact area is more similar in most respects to the two states than to the nation as a whole.

All data presented applies to calendar year 1976, which is the latest information available.

Cancer Rates in the Impact Area, 1976

Place	Cancer Deaths,76	Population,76	Cancer Death Rate,76
Crawford, Co., PA	179*	85,700**	208.9 per 100,000***
Erie Co., PA	507*	275,000**	184.4 per 100,000***
Ashtabula Co., OH	207*	101,300**	204.3 per 100,000***
Three-Co. Aggregate	893***	462,000***	193.3 per 100,000***
Pennsylvania	24,025*	11,862,000**	202.5 per 100,000*
Ohio	19,302*	10,690,000**	180.6 per 100,000*
Two-State Aggregate	43,327***	22,552,000***	192.1 per 100,000***
United States	377,312*	214,659,000**	175.8 per 100,000*

Sources: *National Center for Health Statistics (NCHS), U.S. Department of Health, Education and Welfare. The term "cancer deaths" is used here for simplicity; the technical terminology employed by NCHS is "malignant neoplasms."

**U.S. Bureau of the Census, July 1, 1976 provisional population estimates, Series P-25, No. 739, November, 1976.

***Calculations performed by Region III Federal Regional Council staff. The NCHS calculations of the 1976 cancer death rates for Pennsylvania, Ohio and the United States are identical to the FRC staff calculations.

The most meaningful comparison appears to be between the three-county cancer death rate (193.3 per 100,000 in 1976) and the two-state cancer death rate (192.1 per 100,000 in 1976).

The Federal Regional Council is not qualified to judge whether this difference (1.2 per 100,000) is significant. Slight differences in data collection methodology may exist among different counties and states. Furthermore, cancer death rates are typically higher in urbanized areas or counties than in rural areas. Should the Corps of Engineers require interpretation of this data, the Federal Regional Council will assist you in contacting the appropriate experts within the U.S. Department of Health, Education and Welfare.

Question II.D. Must a coordinated Emergency Medical Service (EMS) system be developed between authorities in both states for mutual responses and assistance without regard to State boundaries?

The policy of the U.S. Department of Health, Education and Welfare is to encourage such joint coordination of EMS systems. EMS planning grants from Section 1203 (1) funds, awarded by HEW, may be used for this purpose.

Final decisions about whether to coordinate EMS systems must be made by local officials. The Federal Government urges local officials in both states to coordinate EMS delivery in the three-county impact area.

Question III. PLANNING. Will the Federal Regional Council initiate the formation of an interstate mechanism between localities and/or the two states to provide a continuing mechanism for planning and policy coordination? The establishment of such an interstate mechanism would measureably aid the handling of secondary impacts by the local, State and Federal Government. If the FRC is involved in the development of this committee, what is the status of it?

Because the impact of the U.S. Steel plant would directly affect three counties in two states, the U.S. Department of Housing and Urban Development, in consultation with the Federal Regional Councils in Philadelphia and Chicago, decided in 1977 to require the development of an interstate mechanism as a condition to its award of planning grants in both Pennsylvania and Ohio. The HUD Region V planning grant recipient is the Eastgate Development and Transportation Agency (EDATA) and the HUD Region III planning grant recipient is the Pennsylvania Governor's Office of State Planning and Development (OSPD).

OSPD initiated the formation of an interstate technical committee in order to immediately respond to the HUD requirement. The technical committee is a group of local and state planners from the three county impact area who meet to exchange information. It is not a substitute for a true interstate mechanism.

By the summer of 1978, confusion had developed in both states about the appropriate process to develop an interstate mechanism. The Federal Regional Councils in Regions III and V jointly convened and chaired a meeting in Conneaut, Ohio on August 23, 1978 to discuss with representatives of elected officials and planning agencies in the three counties and two states the process for developing an interstate mechanism. The product of the meeting was an accepted and defined process and timetable for completing this task.

The timetable developed at the August 23 Conneaut meeting called for final formulation of the interstate mechanism by December 31, 1978. Because some of the participants in the development of an interstate mechanism have failed to adhere to the process and timetable, the December 31 deadline has passed without completion of the task.

Ohio has already adopted its own position of the goals and objectives desired. The Northwest Pennsylvania Futures Committee, which is funded by the Economic Development Administration of the U.S. Department of Commerce, is responsible for coordinating a Pennsylvania position. The NPFC anticipates completing this task in late January or early February, 1979, so that any differences between the Ohio and Pennsylvania positions can be negotiated. Principal elected officials in the three county impact area must approve the final draft for an interstate mechanism before it is submitted to the Federal Regional Councils.

The Federal Regional Councils will prepare a single Federal response on the proposal, either approving it or suggesting modifications. It will probably be March, 1979, or later, before the local elected officials and the Federal Regional Councils have finally worked the organization, goals and operating procedures for an interstate mechanism.

At the least, the interstate mechanism is to become a recognized forum for exchange of information among local elected officials, for coordination of planning and development activities, and for resolution of potential conflicts in Federal funding applications between Ohio and Pennsylvania. The Federal Government is prepared to make grant awards and other decisions consistent with the desires of the interstate mechanism to the fullest possible extent. The two Federal Regional Councils will be the Federal coordinators and points of contact for these purposes.

While the creation of a viable interstate mechanism will measureably aid the handling of secondary impacts, it will not be a substitute for a sound local planning process (at the Ashtabula County level in Ohio and at the Erie and Crawford level in Pennsylvania). Local and county planning efforts and especially the Federally-funded planning process, will continue to be critical points for coordinating secondary impacts and development.

Please do not hesitate to contact me again if this Federal Regional Council can provide further information or other assistance to you.

Sincerely,

John Kane
Staff Director

LISTING OF FEDERAL ASSISTANCE PROGRAMS SUITABLE

JOINT FUNDING PURPOSES

NOVEMBER 1978

The programs listed herein are considered suitable for joint funding with other closely related Federal financial assistance programs in accordance with the provisions of OMB Circular No. A-111.

For programs that appear in the Catalog of Federal Domestic Assistance but are not listed here as suitable for joint funding, the applicant is advised to consult the headquarters or field office of the appropriate funding agency for further information on statutory or other restrictions involved.

Office of Management and Budget
Intergovernmental Affairs Division

DEPARTMENT OF AGRICULTURE

10.405 Farm Labor Housing Loans and Grants
10.418 Water and Waste Disposal Systems for Rural Communities
10.424 Industrial Development Grants
10.426 Area Development Assistance Planning Grants
10.651 Forestry Cooperative Research
10.652 Forestry Research
10.655 Assistance to States for Tree Improvement
10.661 Youth Conservation Corps-Grants to States
10.664 Cooperative Forestry Assistance
(Includes programs previously listed as:
10.656 Cooperative Forest Fire Control;
10.657 Cooperation in Forest Management and Processing;
10.658 Cooperative Forest Insect and Disease Management;
10.659 Cooperative Production and Distribution of Forest Tree Planting;
10.660 General Forestry Assistance;
10.662 Rural Community Fire Protection.)

DEPARTMENT OF COMMERCE

11.300 Economic Development-Grants and Loans for Public Works and Development Facilities
11.301 Economic Development-Business Development Assistance
11.302 Economic Development-Support for Planning Organizations
11.303 Economic Development-Technical Assistance
11.304 Economic Development-Public Works Impact Projects
11.305 Economic Development-State and Local Economic Development Planning
11.306 Economic Development-District Operational Assistance
11.307 Economic Development-Special Economic Development and Adjustment Assistance Program
11.308 Grants to States for Supplemental and Basic Funding of Titles I, II, III, IV, and IX Activities
11.405 Anadromous and Great Lakes Fisheries Conservation
11.417 Sea Grant Support
11.418 Coastal Zone Management Program Development
11.419 Coastal Zone Management Program Administration
11.421 Coastal Energy Impact Program-Formula Grants
11.422 Coastal Energy Impact Program-Planning Grants
11.424 Coastal Energy Impact Program-Environmental Grants

DEPARTMENT OF DEFENSE

12.305 Civil Defense-State and Local Emergency Operating Centers
12.319 Civil Defense-State and Local Maintenance and Services
12.321 Civil Defense-State and Local Supporting Materials

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

13.210 Comprehensive Public Health Services-Formula Grants
13.211 Crippled Children's Services
13.217 Family Planning Projects
13.224 Community Health Services
13.226 Health Services Research and Development-Grants and Contracts
13.228 Indian Health Services-Health Management Development Program
13.229 Indian Health Services-Sanitation Management Development Program
13.231 Maternal and Child Health Research
13.232 Maternal and Child Health Services
13.233 Maternal and Child Health Training
13.235 Drug Abuse Community Service Programs

13.237 Mental Health-Hospital Improvement Grants
13.238 Mental Health-Hospital Staff Development Grants
13.242 Mental Health Research Grants
13.244 Mental Health Clinical or Service Related Training Grants
13.246 Migrant Health Grants
13.252 Alcoholism Treatment and Rehabilitation/Occupational Alcoholism Services Programs
13.254 Drug Abuse Demonstration Programs
13.257 Alcohol Formula Grants
13.259 Mental Health-Children's Services
13.260 Family Planning Services-Training Grants and Contracts
13.266 Childhood Lead-Based Paint Poisoning Control
13.267 Urban Rat Control
13.268 Disease Control-Project Grants
13.269 Drug Abuse Prevention Formula Grants
13.271 Alcohol Research Scientist Development and Research Scientist Awards
13.273 Alcohol Research Programs
13.274 Alcohol Clinical or Service Related Training Programs
13.275 Drug Abuse Education Programs
13.277 Drug Abuse Research Scientist Development and Research Scientist Awards
13.279 Drub Abuse Research Programs
13.280 Drug Abuse Clinical or Service Related Training Programs
13.281 Mental Health Research Scientist Development and Research Scientist Awards
13.284 Emergency Medical Services
13.290 Special Alcoholism Projects to Implement the Uniform Act
13.292 Sudden Infant Death Syndrome Information and Counselling Program
13.293 State Health Planning and Development Agencies
13.294 Health Planning-Health Systems Agencies
13.295 Community Mental Health Centers-Comprehensive Services Support
13.296 Comprehensive Hemophilia Diagnostic
13.359 Nurse Training Improvement-Special Projects
13.361 Nursing Research Project Grants
13.381 Health Professions-Financial Distress Grants
13.392 Cancer-Construction
13.400 Adult Education-Grants to States
13.403 Bilingual Education
13.405 Civil Rights Technical Assistance and Training
13.406 College Library Resources
13.408 Construction of Public Libraries
13.420 Alcohol and Drug Abuse Prevention
13.427 Educationally Deprived Children-Handicapped
13.428 Educationally Deprived Children-Local Educational Agencies
13.429 Educationally Deprived Children-Migrants
13.430 Educationally Deprived Children-State Administration
13.431 Educationally Deprived Children in State Administered Institutions Service Neglected or Delinquent Children
13.433 Follow Through
13.435 Foreign Language and Area Studies-Centers and International Studies Programs
13.440 Fulbright-Hays Training Grants-Group Projects Abroad
13.443 Handicapped-Research and Demonstration
13.444 Handicapped Early Childhood Assistance
13.445 Handicapped Innovative Programs-Deaf-Blind Centers
13.449 Handicapped Preschool and School Programs
13.450 Handicapped Regional Resource Centers
13.451 Handicapped Personnel Preparation
13.452 Handicapped Teacher Recruitment and Information
13.454 Higher Education-Strengthening Developing Institutions
13.455 Higher Education Academic Facilities-State Administration
13.464 Library Services-Grants for Public Libraries
13.465 Library Services-Interlibrary Cooperation
13.468 Library Training Grants
13.475 Library Research and Demonstration
13.477 School Assistance in Federally Affected Areas-Construction
13.482 Special Services for Disadvantaged Students
13.488 Talent Search
13.489 Teacher Corps-Operations and Training
13.491 University Community Service-Grants to States
13.492 Upward Bound
13.493 Vocational Education-Basic Grants to States
13.494 Vocational Education-Consumer and Homemaking
13.495 Vocational Education-Program Improvement and Supportive Services
13.498 Vocational Education-Program Improvement Projects
13.499 Vocational Education-Special Needs
13.500 Vocational Education-State Advisory Councils
13.503 Vocational Education-Graduate Leadership Development Program
13.510 Higher Education-Cooperative Education
13.512 Educationally Deprived Children-Special Incentive Grants
13.518 Higher Education Instructional Equipment
13.522 Environmental Education

13.525 Emergency School Aid Act-Basic Grants to Local Educational Agencies
13.526 Emergency School Aid Act-Pilot Programs (Special Programs and Projects)
13.528 Emergency School Aid Act-Bilingual Education Project
13.529 Emergency School Aid Act-Special Programs and Projects (Non-profit Organizations)
13.530 Emergency School Aid Act-Educational Television
13.532 Emergency School Aid Act-Special Programs
13.533 Right to Read-Elimination of Illiteracy
13.534 Indian Education-Grants to Local Educational Agencies
13.535 Indian Education-Special Programs and Projects
13.536 Indian Education-Adult Indian Education
13.543 Educational Opportunity Centers
13.548 Grants to States for State Student Incentives
13.549 Ethnic Heritage Studies Program
13.550 State Planning Commissions Program-Intrastate Planning
13.551 Indian Education-Grants to Non-Local Educational Agencies
13.554 Career Education
13.557 University Community Service-Special Projects
13.558 Bilingual Vocational Training
13.560 Regional Education Programs for Deal and Other Handicapped Persons
13.561 Education for the Use of the Metric System of Measurement
13.562 Education for Gifted and Talented Children and Youth
13.563 Community Education
13.564 Consumers' Education
13.565 Women's Educational Equity
13.566 Elementary and Secondary School Education in the Arts
13.567 Domestic Mining and Mineral Fuel Conservation Fellowship Program
13.568 Handicapped Innovative Programs-Programs for Severely Handicapped Children
13.570 Libraries and Learning Resources
13.571 Educational Innovation and Support
13.576 Strengthening Research Library Resources
13.588 Vocational Education-Contract Program for Indian Tribes and Indian Organizations
13.589 Emergency School Act-Magnet Schools, University/Business Cooperation
13.590 Emergency School Aid-Neutral Site Planning
13.600 Administration for Children, Youth, and Families-Head Start
13.608 Administration for Children, Youth, and Families-Child Welfare Research and Demonstration
13.612 Native American Programs
13.623 Administration for Children, Youth, and Families - Runaway Youth
13.624 Rehabilitation Services and Facilities-Basic Support
13.626 Rehabilitation Services and Facilities-Sepcial Projects
13.627 Rehabilitation Research and Demonstrations
13.628 Child Abuse and Neglect Prevention and Treatment
13.629 Rehabilitation Training
13.630 Developmental Disabilities-Basic Support and Advocacy Grants
13.631 Developmental Disabilities-Special Projects
13.632 Developmental Disabilities-University Affiliated Programs
13.633 Special Programs for the Aging-State Agency Activities and Area Planning and Social Service Programs
13.634 Special Programs for the Aging-Title III Section 308 Model Projects on Aging
13.635 Special Programs for the Aging-Nutrition Program for the Elderly
13.636 Special Programs for the Aging-Research and Development
13.637 Special Programs for the Aging-Training
13.640 Administration for Children, Youth, and Families-Youth Research and Development
13.642 Social Services for Low Income and Public Assistance Recipients
13.644 Public Assistance Training Grants-Title XX
13.645 Child Welfare Services-State Grants
13.646 Work Incentives Program-Child Care-Employment Related Supportive Services
13.647 Social Services Research and Demonstration
13.648 Child Welfare Services Training Grants
13.649 Rehabilitation Services and Facilities-Innovation and Expansion
13.680 Telecommunications Demonstrations for Social Services

13.766 Health Financing Research, Demonstrations and Experiments
13.810 Assistance Payments-State and Local Training
13.812 Assistance Payments-Research
13.864 Population Research
13.865 Research for Mothers and Children
13.879 Medical Library Assistance
13.887 Medical Facilities Construction-Project Grants
13.888 Home Health Services Grant Program
13.890 Genetic Diseases Testing and Counseling Services
13.894 Environmental Health Research and Manpower Development Resources
13.898 Alcoholism Demonstration Programs
13.899 Alcohol Abuse and Alcoholism Prevention Demonstration Programs
13.950 Educational Research and Development

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

14.203 Comprehensive Planning Assistance
14.219 Community Development Block Grants/Discretionary Grants
14.221 Urban Development Action Grants
14.506 General Research and Technology Activity
14.702 State Disaster Preparedness Grants

DEPARTMENT OF THE INTERIOR

15.301 Control of Fires in Inactive Coal Deposits
15.400 Outdoor Recreation-Acquisition, Development and Planning
15.411 Historic Preservation
15.950 Additional Water Resources Research
15.951 Water Resources Research-Assistance to State Institutes
15.952 Water Resources Research-Matching Grants to State Institutes

BUREAU OF INDIAN AFFAIRS

15.142 Self Determination Grants-Indian Tribal Governments
15.143 Training and Technical Assistance-Indian Tribal Governments

DEPARTMENT OF JUSTICE

16.500 Law Enforcement Assistance-Comprehensive Planning Grants
16.501 Law Enforcement Assistance-Discretionary Grants
16.502 Law Enforcement Assistance-Improving and Strengthening Law Enforcement and Criminal Justice
16.503 Law Enforcement Assistance-Technical Assistance
16.507 Law Enforcement Research and Development-Project Grants
16.515 Criminal Justice Systems Development
16.516 Law Enforcement Assistance-Juvenile and Delinquency Prevention-Allocation to States
16.517 Law Enforcement Assistance Administration-OJJDP Special Emphasis Prevention and Treatment Programs
16.521 Crime Prevention-Mobilization of Public and Non-Public Resources

DEPARTMENT OF LABOR

17.200 Apprenticeship Outreach
17.207 Employment Service
17.211 Job Corps
17.219 Institutional Grant Program
17.228 National On-the-Job Training
17.230 Migrant and Seasonal Farm Workers
17.232 Comprehensive Employment and Training Programs
17.233 Employment and Training Research and Development Projects
17.234 Employment and Training-Indians and Native Americans
17.235 Senior Community Service Employment Program
17.600 Coal Mine Health and Safety Grants

DEPARTMENT OF TRANSPORTATION

20.004 Boating Safety-Financial Assistance
20.103 Airport Planning Grant Program
20.205 Highway Research, Planning, and Construction
20.303 Grants-in-Aid for Railroad Safety-State Participation
20.500 Urban Mass Transportation Capital Improvement Grants
20.504 Mass Transportation Technology
20.505 Urban Mass Transportation Technical Studies Grants
20.506 Urban Mass Transportation Demonstration Grants
20.600 State and Community Highway Safety
20.700 Gas Pipeline Safety

APPALACHIAN REGIONAL COMMISSION

23.002 Appalachian Supplements to Federal Grant-in-Aid (Community Development)
23.003 Appalachian Development Highway System
23.004 Appalachian Health Programs
23.006 Appalachian State Housing Technical Assistance Grants
23.008 Appalachian Local Access Roads
23.009 Appalachian Local Development District Assistance
23.010 Appalachian Mine Area Restoration
23.011 Appalachian State Research, Technical Assistance, and Demonstration Projects
23.012 Appalachian Vocational and Other Education Facilities and Operations
23.013 Appalachian Child Development
23.017 Appalachian Special Transportation Related Planning, Research and Demonstration Program

CIVIL SERVICE COMMISSION

27.012 Intergovernmental Personnel Grants

GENERAL SERVICES ADMINISTRATION

39.006 National Historical Publications and Records Grants

COMMUNITY SERVICES ADMINISTRATION

49.002 Community Action
49.005 Community Food and Nutrition
49.010 Older Persons Opportunities and Services
49.011 Community Economic Development
49.013 State Economic Opportunity Offices
49.014 Emergency Energy Conservation Services
49.015 Summer Youth Recreation

VETERANS ADMINISTRATION

64.005 Grants to States for Construction of State Home Facilities
64.014 Veterans State Domiciliary Care
64.015 Veterans State Nursing Home Care
64.016 Veterans State Hospital Care
64.020 Assistance in the Establishment of New State Medical Schools
64.021 Grants to Affiliated Medical Schools--Assistance to Health Manpower Training Institutions

WATER RESOURCES COUNCIL

65.001 Water Resources Planning

ENVIRONMENTAL PROTECTION AGENCY

66.001 Air Pollution Control Program Grants
66.005 Air Pollution Control Survey and Demonstration Grants
66.418 Construction Grants for Wastewater Treatment Works
66.419 Water Pollution Control -- State and Interstate Program Grants
66.420 Water Pollution Control -- State and Local Manpower Program Development
66.426 Water Pollution Control -- State and Areawide Water Quality Management Planning Agency
66.432 State Public Water System Supervision Program Grants
66.433 State Underground Water Source Protection -- Program Grants
66.434 Safe Drinking Water -- State and Local Program Development Grants
66.438 Construction Management Assistances Grants
66.451 Solid and Hazardous Waste Management Program Support
66.452 Solid Waste Management Demonstration Grants
66.453 Solid Waste Management Training Grants
66.500 Environmental Protection -- Consolidated Research Grants
66.501 Air Pollution Control Research Grants
66.502 Pesticides Control Research Grants
66.504 Solid Waste Disposal Research Grants
66.505 Water Pollution Control--Research, Development and Demonstration Grants
66.506 Safe Drinking Water Research and Demonstration Grants
66.507 Toxic Substances Research Grants
66.600 Environmental Protection Consolidated Grants--Program Support
66.602 Environmental Protection Consolidated Grants--Special Purpose
66.700 Pesticides Enforcement Program Grants

ACTION

72.004 University Year for Action
72.008 The Senior Companion Program
72.009 The Youth Challenge Program
72.010 Mini-Grant Program
72.011 State Volunteer Services Coordinator Program

SOUTHWEST BORDER REGIONAL COMMISSION

79.001 Southwest Border Regional Economic Development
79.002 Southwest Border Technical and Planning Assistance

UPPER GREAT LAKES REGIONAL COMMISSION

63.003 Upper Great Lakes Supplements to Federal Grant-in-Aid
63.004 Upper Great Lakes Regional Transportation
63.005 Upper Great Lakes Energy Demonstration Projects and Programs
63.006 Upper Great Lakes Indigenous Arts and Crafts Demonstration Projects
63.007 Upper Great Lakes Health and Nutrition Demonstration Projects
63.008 Upper Great Lakes Education Demonstration Projects

DEPARTMENT OF ENERGY

81.037 Research and Development--Fission, Fossil, Solar, Geothermal, Electric and Storage Systems, Magnetic Fusion

COASTAL PLAINS REGIONAL COMMISSION

28.003 Coastal Plains Supplements to Federal Grant-in-Aid
28.004 Coastal Plains Regional Transportation
28.005 Coastal Plains Energy Demonstration Projects and Programs
28.007 Coastal Plains Health and Nutrition Demonstration Projects
28.008 Coastal Plains Education Demonstration Projects

FOUR CORNERS REGIONAL COMMISSION

38.003 Four Corners Supplements to Federal Grant-in-Aid
38.004 Four Corners Regional Transportation
38.005 Four Corners Energy Demonstration Projects and Programs
38.007 Four Corners Health and Nutrition Demonstration Projects

NEW ENGLAND REGIONAL COMMISSION

48.003 New England Supplements to Federal Grant-in-Aid
48.004 New England Regional Transportation
48.005 New England Energy Demonstration Projects and Programs

OLD WEST REGIONAL COMMISSION

75.003 Old West Supplements to Federal Grant-in-Aid
75.007 Old West Health and Nutrition Demonstration Projects

OZARKS REGIONAL COMMISSION

52.003 Ozarks Supplements to Federal Grant-in-Aid
52.004 Ozarks Regional Transportation
52.005 Ozarks Energy Demonstration Projects and Programs
52.007 Ozarks Health and Nutrition Demonstration Projects

PACIFIC NORTHWEST REGIONAL COMMISSION

76.004 Pacific Northwest Regional Transportation
76.005 Pacific Northwest Energy Demonstration Projects and Programs
76.008 Pacific Northwest Education Demonstration Projects